

LAWS OF LIFE

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By

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CHAPTER I

LOVE, MARRIAGE AND DIVORCE

How is it that men do not always wish to marry the girls they take out and about? And how is it that so many attractive girls do not marry? Their grandmothers and mothers with less freedom had apparently a better chance of marriage. If a man loves a girl he will seek her society above all else, but if he only wants her friendship there is no reason why he should marry her. A wise girl is able to detect the philanderer.

If a man desires more than a girl's friendship, and obtains what he wants without marriage, there is no reason why he should marry her. Even if he did the dice are loaded against the happiness of that marriage. The first real quarrel, and the girl's previous lapse is thrown in her face. Doctors are often consulted when a girl is faced with the birth of an illegitimate child. Her relatives may wish the man to marry the girl, or as the poorer classes say

"to make her respectable." That phrase is not so foolish as it sounds, because it recognises the status of marriage. In nearly every case my advice has been: "Do anything you will, but don't let them marry." It is far better for a girl to face the world with an illegitimate child than to atone for her folly by a life of absolute misery.

No man could be deliberately cruel to a girl whom he loved, but some men, human nature being what it is, are willing to take advantage of a girl to whom they are physically attracted. In seduction the man has inflicted physical and moral injury on a girl. He has lowered her in her own estimation, and in the estimation of other men and women. In the brutal but expressive phrase she is "damaged goods," and her whole life may be damaged. On the other hand the man may not be wholly to blame. Many girls, *faute de mieux*, put themselves in the way of being seduced. They may do so for money, as the price of amusements they could not otherwise obtain, or simply for physical pleasure. Such pleasure proves bitter sweet, and cannot give the girl the happiness she desires, because sex happiness is governed by two laws—one psychological, the other physiological. The greatest pleasure is when sex union is the physical expression of unreserved psychological attraction—or love.

The girl who has been seduced has lessened her chance of marriage, and if some of these accommodating young women could overhear the way in which their men friends discuss them, they might envy their more virtuous sisters, even if the latter do not appear to be having at the moment such a good time.

There are four men to whom the weaknesses of humanity are revealed—the priest, the doctor, the lawyer, and the bank manager. The secrets of their clients are inviolate, but men to whom such things are told have some knowledge of the rocks on which happiness is wrecked

WHAT A MAN TOLD ME

Before he became a priest he was a trade union leader, and thus had a double insight into the lives of manual workers.

He said that when marriages go wrong it is usually due to lack of preparation on the part of the man and the girl. As a bachelor the young artisan or transport worker, earning three or more pounds a week, is used to a fairly high standard of living. If he lives with his parents his board and lodging may cost him a pound a week. The rest of his wage is spent on amusement—cinemas, music-halls, football and motor cycling at week-ends. He seldom saves, and

rarely realises that marriage will mean curtailing these amusements. He thinks of the old adage—two can live cheaper than one. In certain cases that may be true ; but assuredly three cannot live cheaper than one.

And what of the girl ? She left school at fourteen, works in a factory, and lives at home. Her earnings are much less than his, and her surplus is spent on dress. She looks pretty in her silk stockings and ready-made costume, for which she is paying a shilling a week. Her engagement is a romance : it is nice to have a boy to take you to the pictures twice a week, and on Sundays to whirl you into the country on the back of his cycle. And she looks forward to marriage as one long courtship. It will be so nice to keep house for him, even in two rooms. At school she had lessons in cooking and laundry work. She had never the opportunity of putting these lessons into practice—but it will all come back to her. They marry, and by the end of six months both are disillusioned. The man is badly fed : these tinned foods that save her trouble do him no good. At least his mother knew how to cook. He begins to drink. The girl is now careless of her appearance, and the house is untidy : both are unhappy.

Out of this arises the difficult social problem of

wages in relation to marriage. The present basis of wage fixation is on what is called the "normal" family—a wife and three children. Of all male manual workers over twenty years of age in England, only 88 per cent. have a wife and three children under fourteen, and only 99 per cent. have more than three dependent children.

As wages are based on the "normal" family, this means that provision is being made for three million phantom wives, and over sixteen million non-existent children, in families of less than three children. In the families of more than three children there are over one and a quarter million children for whom this wage standard does not provide.

This system of wages is economically wasteful and socially disastrous. But no legislative change can overcome the fundamental fact that marriage implies individual sacrifice.

WHAT A GIRL TOLD ME

Unmarried, young, well bred, educated and practical, she is making the best of things. There is hard work at her business, and then for relaxation dancing, skating, theatres and amusing herself and her friends.

Marriage! There is the ideal on which it is

based, and the practical means by which that ideal may be preserved. From the practical point of view women should regard marriage as men regard their business—a thing to be made a success. Surely much discomfort and even unhappiness would be avoided if women prepared themselves beforehand both on the domestic and mothercraft sides? From this point of view marriage should be run as a business partnership. If the man is doing his best, then the woman should be out to do her best in the household. And she can only do that if she knows the most efficient ways of getting things done. If material things run smoothly, then is it not much more likely that there will also be peace of mind?

It is not true that practicality spoils romance. Any man should be glad if a girl were trying to prepare herself for marriage, and to make it a success. There would be fewer unhappy marriages if both parties thought of it more as a business partnership and less as a relaxation.

Unless the basis of marriage is friendship it is not likely to be a lasting success. The basis of happy married life should be 75 per cent. companionship and 25 per cent. physical attraction. If this is so, then the trivial causes of unhappiness will not arise.

The ideal marriage would be based on a purely

psychological attraction, followed by a physical attraction, because the former will prove more lasting than the latter. And if two people know each other well they are less likely to fear the warning of Robert Louis Stevenson—that when you marry you invite the recording angel to live with you. A marriage may be unhappy simply because the two don't know each other's views until they are married. Each should know beforehand what the other thinks on every subject from religion to breakfast. That is the difference between infatuation and friendship. When people are infatuated they attribute to a human being virtues which that person in all probability does not possess. In friendship you like someone in spite of their faults. That is why companionship is essential to happiness in marriage. There would be less divorce if people thought more carefully before marriage.

Men seem to marry without considering whether the girl will be able to help them: and a woman can help or hinder her husband enormously. It is curious that men don't think more about that. If they did there would be fewer misfits in marriage. Why on earth did he marry her, or why did she marry him? That question would be asked less frequently if people remembered that normal marriage is a partnership for life.

HAPPY MARRIAGES

The day may come when a biologist in his laboratory may be able to say as the result of a blood test whether or not two people are likely to make a happy marriage. As things are, the only way, so far as I can see, whereby the number of unhappy marriages might be reduced would be if more marriages were made in Heaven.

The real urge to marry should be Love—a psychological attraction of mind, plus a physical attraction of body, plus an æsthetic attraction of personality. Unfortunately that is not the sole reason why people marry. A man may marry because he is lonely and a girl because she is unhappy at home. Others marry to gratify physical desire, and as soon as that is satisfied there is nothing left. Modern love is more complicated than barbaric love. In primitive times the man clubbed the lady on the head, and carried her off to his cave. Now the woman decides what man shall have her, but the interests of life are so varied that it may be difficult for a man or woman to know whether Love is really paramount.

If passion has been mistaken for Love, then once it has burnt itself out the man or woman will again set out in search of their ideal, leaving a trail of

misery behind them. Others marry for money or social position, and it may be without affection or even respect. Unless they be under-sexed, the man or woman who under these circumstances has to pay the debitum of marriage must pay dearly in self-abasement, for love is the greatest physical experience of humanity, and the richest man or woman on earth cannot buy it. As Meredith, to whom it came late in life, said : " Love is a madness, but with heaven's wisdom in it—a spark. Even when it is driving us on the breakers, call it love ; and be not unworthy of it : hold to it." In days when immorality was more robust, it was noted that the " love child " was often healthier and more beautiful than the child born in wedlock. My thesis is that if more marriages were determined by love fewer tainted children would be born.

The man who pretends to understand women is usually a fool. No man, bar Shakespeare, has ever understood women. He is a wise man who understands himself. If the urge for sex union be merely physical attraction or lust, then, the moment after the greatest intimacy in life, the man's feelings towards the girl will be those of utter indifference or even of revulsion—the greatest and most sudden psychological change of which the mind is capable. Where there is love this change does not occur.

In plain language sex union may be either the highest or the lowest expression of a man's nature. In a happy marriage this *volte face*, as disgusting to the man as it must be to the woman—if he betrays it—does not happen. It is not marriage but love which makes the difference, because a man may love his mistress more than he ever loved his wife. In that event there will be no revulsion of feeling—marriage or no marriage—but greater affection. All women should know this psychological truth about men—a truth which no man who has ever had the experience can honestly deny. The greatest psychologist the world has ever known—Shakespeare—warned all women : “ See, how he leaves your arms ”

Secondly, the man's desire is satisfied by sex union, but it is otherwise with a woman. Once a woman's sex life has been awakened she cannot find complete happiness until she has gratified the primordial longing implanted in her very being—to have a child. That is a law from which no healthy woman can escape, although if her sex life has not been awakened that high potential of creative energy may be sublimated in intellectual and other interests.

A double standard of morality, whereby men expect in the girl they will marry a purity they do not demand of themselves, is illogical in terms of

morality. If chastity be a virtue, its obligations should be the same for men as for women. Yet this double standard has always existed and probably always will exist as long as the family is the basis of our civilisation. If the family ceased to be our unit of civilisation there is no reason why marriage should not be replaced by general promiscuity. If all children were brought up by the State and not by their parents, the question again arises—why have a marriage at all? To protect the family is the best and most logical explanation of an illogical fact—that men insist on a dual standard of purity both before and after marriage. No reasonable person will deny that the moral fault of impurity is absolutely the same whether it be in a man or a woman, *but*—the act of the man cannot, and the act of the woman may, introduce an alien strain into the family. And what a woman did before marriage she may do after marriage.

Until recently a dual standard of morality was recognised by the Law of England, and infidelity on the part of the husband was not in itself a cause for divorce. The law is now the same for men as for women, and a woman may divorce her husband for a single act of adultery. Are the women any better off by reason of this change? I doubt it, because the woman is now expected to act in

accordance with the new law. Thus, when a married woman recently sued in the Divorce Court for a judicial separation on account of the adultery of her husband, she was calmly informed by the judge that in so doing she was actuated by motives of spite, and that her proper course was to sue for divorce. To what end? That her rival might obtain the full status of a married woman! Here was a wife who had helped her husband to success, who had borne him children, and was now becoming old—because a woman ages more quickly than a man. Her husband had turned to a young and attractive girl, who had never done a hand's turn to help him, but was now willing to share his success. And the wife by seeking for divorce is expected to raise this girl from the insecurity of a mistress to the status of marriage. If this change in the Law of England had been made at the instigation of men I could understand it, but in point of fact it was carried out at the behest of a small handful of women, for the most part unmarried. The consequences illustrate the danger of seeking short cuts out of difficulties with which humanity has always been faced.

In 1910 it was impossible to walk down Piccadilly at night without being accosted every few yards. There is no reason to believe that the

morality of men has undergone a transformation, but to-day the professional prostitute has more or less disappeared. Her place has been taken by the amateur. Some are promiscuous, while others have a few men friends from whom they accept presents of money, amusement, or clothes. Three factors have contributed towards this social change—the advent of vast numbers of women in business, the decline of religion amongst women, and the indiscriminate broadcasting of information on contraception. Where higher ideals have been abandoned the fear of consequences has often restrained the passions of men and women. Fear is not the highest motive for right conduct, but fear has its uses in society if it restrains people from doing injury to themselves or to others. The advent of these amateurs is not in the interest of society, because, more than their professional sisters, they are apt to become carriers of venereal disease.

In Spain and other countries where prostitution is openly recognised, the women who practice this calling are regarded by themselves and by others as unfortunate. Their place in society is recognised as a protection to their more fortunate sisters against the unrestrained passions of men. In Spain seduction is rare, and the usual penalty is death. This penalty is not inflicted by the courts, but by

a male relative of the girl. The seducer in Spain knows what may await him—the flash of a knife. Barbaric ! It may be so, but there are crimes for which the penalty imposed by the State is—to those who have been wronged—a pale shadow of retribution. The standard of sex morality amongst men is no higher in southern than in northern Europe, but they do seek to preserve the purity of their women : and any tendency to lower an ideal, difficult though that ideal may be, is one step downwards towards a state of bestial animalism.

NOTE.—To those who regard marriage as a civil contract which may be dissolved by reason of a single act of infidelity, it seems illogical that the contract may not also be dissolved on account of habitual drunkenness, incurable insanity, or imprisonment for life. None of these three last causes for divorce are likely to lead to collusion !

Dean Inge has suggested that two forms of marriage be recognised. Marriages in Registry Offices, which may later be dissolved for breach of contract. Marriages in a Church, where the parties marry “ for better for worse, for richer for poorer, in sickness and in health, to love, cherish, and to obey, till death us do part.”

CHAPTER II

BIRTH CONTROL

IN all probability birth control, in one form or another, has been practised from time immemorial. The Old Testament (Gen. xxxviii. 8, 9, 10) cites the sin of Onan, *coitus interruptus*, for which the penalty was death. Some suggest the penalty was inflicted not for the act but for breach of the tribal custom whereby Onan was required to have a family by his brother's widow. That is a fine distinction which becomes invalid when we find that the Mosaic Law always intended intercourse to occur at the time when a woman was most likely to conceive (Lev. xv. 19-28).

Amongst one of the oldest aboriginal races in Central and Western Australia a highly scientific and fool-proof method of birth control is employed. An opening is made into the posterior urethra of every male child at the age of ten. Consequently no further precautions need be taken against the risk of pregnancy, and when pregnancy is desired the opening in the urethra is closed. Despite or

may be on account of this most efficient form of birth control, the people who practise it are amongst the poorest and most degraded savages in the world.

During the present century a revolutionary change in birth control has occurred in many countries of Western Europe and in America. For the first time contraception is being practised by women of the professional, middle, and artisan classes. Prior to our time contraception was mostly practised by prostitutes. An interesting study has been made about the habits of 10,000 women who in the past few years have attended Mrs Sanger's Birth Control Clinic in New York. Amongst these women the principal races and religions were well represented—Jews, Catholics, and Protestants, and 93 per cent. had been using some form of contraception before coming to the Clinic for further advice.

Birth-control clinics have sprung up all over Britain and America, and a knowledge of contraception has reached all classes of women, save the very poorest. This marks a great social change, which cannot fail to have repercussions on society and on the future of the white races. For the first time married women may practise contraception without the knowledge of their husbands. Nor is this knowledge confined to married women. In an industrial town in the midlands of England a social

worker found that numbers of factory girls were in the habit of attending a hairdresser on Friday nights in order to be fitted with a contraceptive for the week-end. When the Bishop of Gloucester suggested that female contraception was responsible for an increase of sex immorality amongst the unmarried, an enthusiastic contraceptist sent a letter to the Press repudiating this charge on the ground that her particular method of contraception could not be used by virgins. With delightful naïvety she assumes that because a woman is unmarried she is *ipso facto* a virgin. Nor is it true that every girl who wears a wedding ring at a birth control clinic, or elsewhere, is of necessity married.

Many circumstances have contributed towards the popularity of birth control. Amongst all classes the standard of living has risen during the present century. Things that our parents would have regarded as luxuries we claim as necessities of life. In our sense of values the motor car, the cinema, the radio, and a minimum of household work, have ousted the old-fashioned ideal of a large family. Only amongst peasant societies are large families welcome. There alone do children represent wealth. The more things we demand as necessities of life, the fewer are the children whom we can afford to support. It may well be that in our desire

to possess more and more material comforts, are the seeds of national decline.

These great changes in our social outlook have led us to abandon the many restrictions, religious, departmental, legal, and medical, placed by our forebears on birth control.

By the Lambeth resolution of 1930 the Anglican Bishops permit the use of contraceptives under certain ill-defined circumstances which are left to the conscience of the individual, but go out of their way to condemn abortion. Why, if contraceptives fail to prevent an unwanted pregnancy, has not the woman a right to destroy the unwanted product of intercourse? It is as if they declared that under certain circumstances theft were no offence, but that burglary under no circumstances can be condoned.

The advocates of abortion claim that if a woman has a right to prevent an unwanted pregnancy, then if contraceptives fail she has the right to terminate the life of the embryo. At a meeting of the Medico-Legal Society of London that point was raised by the late Earl Russell, and was answered by the then President—Lord Justice Atkins. I quote from memory: "The suggestion that a woman has the right to terminate the life of her child is news to me. But if she does possess this

right, when does it cease? At the birth, but, if so, why?"

The Federal Council of Churches of Christ in America now permit the use of contraceptives under certain limited conditions. The Catholic Church alone has refused to lift the ban on contraceptives.

Equally significant is the change in the attitude of the Ministry of Health towards instruction in the use of contraceptives at pre-natal clinics provided under the Public Health Acts. In 1930 it was not permissible for these clinics to give instruction in contraception, and women who in the opinion of the Medical Officer to the clinic were in need of such instruction had to be referred to the gynaecological department of a general hospital. In 1931 this ban was lifted, and the Ministry decided "That advice on contraceptive methods will be given only to married women who attend clinics for such medical advice or treatment, and in whose cases pregnancy would be detrimental to health" In 1934 a further change in policy was announced in the following circular letter from the Ministry to all maternity and child-welfare authorities: "The Departmental Committee on Maternal Mortality and Morbidity, in their final report published in 1932, called special attention to the importance of the avoidance of pregnancy by women suffering

from organic disease, such as tuberculosis, heart disease, diabetes, chronic nephritis, etc., in which childbearing is likely seriously to endanger life. The Committee considered that advice and instruction in contraceptive methods should be readily available for such women.

“ It was pointed out in the Memorandum and Circular of 1931 that the powers which the Public Health Acts confer upon local authorities for the provision of clinics limit their availability to sick persons, but the Minister is advised that there is nothing to prevent the local authority from rendering such a clinic available for women suffering from forms of sickness other than gynæcological conditions. After careful consideration of the recommendation made by the Departmental Committee, the Minister is of opinion that where a local authority has provided a clinic at which medical advice and treatment are available for married women suffering from gynæcological conditions, and at which contraceptive advice is afforded to married women so suffering in whose cases pregnancy would be detrimental to health, it would be proper also for married women who are suffering from other forms of sickness, physical or mental, such as those mentioned in the Report of the Departmental Committee, which are detrimental to them as mothers, to be

afforded contraceptive advice at the clinic if it is found medically that pregnancy would be detrimental to health. What is, or is not, medically detrimental to health must be decided by the professional judgment of the registered medical practitioner in charge of the clinic "

The legal ban, whereby the publication of contraceptive information was indicted as "obscene," no longer operates. The immensity of this change will be appreciated by recalling the Bradlaugh trial of 1877, and the Birth Control Libel Action of 1923

Early in the nineteenth century there was published in Boston, Mass., a small book entitled *Fruits of Philosophy: An Essay on the Population Question*, by Charles Knowlton, M.D., a well-qualified physician. This book is a popular treatise in favour of artificial birth control, and describes the physiology of generation, and certain methods of contraception. Although unnecessary details are given, the tone of the book is cold in comparison with the erotic productions of our own time. In America it circulated amongst Free Thinkers, and was first published in London about 1833. From that time the book was freely sold at Free Thought depots, until on December 23rd, 1876, a Bristol bookseller named Cook, who had interleaved the

pages with indecent plates, was convicted. On January 10th, 1877, the London publisher was charged at the Guildhall with publishing an indecent book. He pleaded guilty, and the book was seized by the police. Charles Bradlaugh and Annie Besant, "honestly believing that on all questions affecting the happiness of the people" the "fullest right of free discussion ought to be maintained at all hazards," reprinted *Fruits of Philosophy*, and on March 23rd, 1877, intimated to the magistrates and to the police that it was once more on sale. Arrested on April 5th, they were charged at the Guildhall on April 16th, and remanded on bail. Further police court proceedings were taken on April 18th, and on April 20th, when the late Dr. C. R. Drysdale, founder of the Malthusian League, gave evidence for the defence. Defendants then obtained an order transferring the proceedings into the High Court. So great was the public interest that 20,000 people are said to have assembled outside the Guildhall. The trial¹ before Lord Justice Cockburn and a Special Jury commenced on June 18th, 1877, and lasted five days. The Solicitor-General, Sir Harding Giffard, Mr. Douglas Straight, and Mr. Mead appeared for the prosecution.

¹ *Trial of C. Bradlaugh and A. Besant* Published by A. & H. Bradlaugh Bonner, 1 Took's Court, London, E. C.

Charles Bradlaugh and Annie Besant appeared in person, and were indicted for having published an obscene libel, this being the form of indictment adopted by the English Criminal Courts for preventing the dissemination of any matter which is calculated to destroy or corrupt the morals of the people. The defendants argued that the book itself was not obscene, and that the practices therein advocated were in the best interest of humanity. So wide was the scope of their defence that it included every single argument that has ever been advanced, even up to our own time, in favour of artificial birth control. Their defence was also remarkable by reason of the forensic ability of Bradlaugh and the eloquence of Mrs. Besant. Her opening speech included the following passage :—

“ I find my clients among the little children. Gentlemen, do you know the fate of so many of these children ? The little ones half-starved because there is food enough for two but not enough for twelve ; half-clothed because the mother, no matter what her skill and care, cannot clothe them with the money brought home by the bread-winner of the family ; brought up in ignorance, and ignorance means pauperism and crime. Gentlemen, your happier circumstances have raised you above this suffering, but on you also this question presses ;

for those over-large families mean also increased poor rates, which are growing heavier year by year. These poor are my clients, and if I weary you by length of speech, as I fear I may, I do so because I think of them even more than I think of your time and trouble. You must remember that those for whom I speak are watching throughout England, Scotland and Ireland for the verdict you will give. Do you wonder I call them my clients, these poor, for whom I plead? They cannot bring the fee of gold such as is received by the learned gentlemen who are briefed against me here ; but they bring what is better than gold ; they send up a few pence week by week out of their scanty wage for as long as the trial lasts ; they send up kindly thoughts and words of cheer and of encouragement ; mothers who beg me to persist in the course on which I have entered, and at any hazard to myself, at any cost and any risk, they plead to me to save their daughters from the misery they have themselves passed through during the course of their married lives."

The case for the prosecution was twofold : First, that the book was obscene in itself ; and secondly, that it tended to corrupt public morals because not only the married, but also the unmarried, and any boy or girl, could buy it for sixpence, and thereby

learn how they might give way to passion without fear of results.

Lord Chief Justice Cockburn, in summing up, drew the jury's attention to two aspects of the criminal law "In the first place, are there in this publication details inconsistent with decency, details calculated to enkindle the passions and desires of lust, and excite libidinous thoughts in the minds of the readers? Even if that should not be the case, the second point is whether the purpose advocated in the work, and the purpose and effect of the details, so elaborately given, is a purpose inconsistent with the morals of society. If so, the work is an illegal work, and the offence with which the defendants were charged, is made out "

On June 22nd, 1877, the jury brought in the following verdict:—

THE CLERK : "Do you find the defendants guilty or not guilty of this charge?"

THE FOREMAN : "We are unanimously of opinion that the book in question is calculated to deprave public morals, but at the same time we entirely exonerate the defendants from any corrupt motives in publishing it."

THE LORD CHIEF JUSTICE : "I am afraid, gentlemen, I must direct you, on that finding, to return a

verdict of guilty under the indictment against the defendants."

Thereafter His Lordship postponed sentence until June 28th.

On June 28th, before the Lord Chief Justice and Mr. Justice Mellor, the defendants moved first to quash the indictment on the ground that the whole libel should have been set out thereon; and secondly, to arrest judgment on the same ground. These applications were refused. The defendants then asked for a new trial by reason of a contradiction in the finding of the jury. In refusing that application, the Court held that in a criminal trial the verdict must be either guilty or not guilty, and that the jury, by finding the book was calculated to deprave public morals, had returned a verdict of guilty, although the want of evil intention might be considered in the punishment. The Solicitor-General then produced two affidavits showing that the defendants, on the night of June 24th, had addressed a public meeting where *Fruits of Philosophy* was sold by the hundred to young women and lads. The Lord Chief Justice said that if the defendants had openly admitted their error and undertaken to do everything in their power to prevent the further circulation of a book which the jury found was calculated to deprave public morals,

he would have been prepared to discharge them on their own recognizances to be of good behaviour in the future. But the case had now assumed the form of a most grave and aggravated offence. The sentence was that each of the defendants be imprisoned for six months, fined £200, and enter into recognizances in a sum of £500 each to be of good behaviour for the term of two years. The defendants then applied to stay execution of the sentence, and gave a pledge to stop the circulation of the book pending the result of an appeal. Leave to appeal was then granted, the defendants being discharged on their own recognizances for £100. In the Court of Appeal the sentence was quashed on the ground of serious omission in the indictment. It is right to add that Mrs. Besant, on becoming a Theosophist, renounced her approval of contraceptives.

The second legal landmark is known as the Birth Control Libel Action. I had written a book containing a strong criticism¹ of the campaign carried on in London by Miss Marie Charlotte Carmichael Stopes, whose doctorate is not in Medicine but in Science and Philosophy, and who in private life is Mrs. Humphrey Verdon Roe. It was my criticism of her campaign which led in a curious way to

¹ *Birth Control A Statement of Christian Doctrine Against the Neo-Malthusians*, 1922, p. 101

the action for libel. She had ordered on February 11th, 1922, a copy of the English edition before it was published, and on March 27th the publishers sent her the book. She is the President of a Society for Constructive Birth Control and Racial Progress, and on April 12th I received a letter from the Secretary, Mr. Humphrey Verdon Roe, her husband, inviting me to debate my views at a meeting of their Society. That invitation was not accepted. She is also concerned with the publication of a monthly news-sheet, *The Statesman's Newspaper : Birth Control News*, and this paper on May 3rd published a review, which needs no comment, and to which I made no rejoinder :—

“ Dr. Sutherland's book will impose only on those who are more ignorant than he is. It is nicely calculated to encourage the biased in their prejudices, for now, when speaking against birth control, they can say ‘ a doctor says so ’. They will probably forget he is a *Roman Catholic doctor*. The omissions from the book are quite as remarkable as its lies. We could fill our columns in illustrations of this, but space is too valuable ”

On May 11th she took out a summons returnable before the Judge in Chambers for an interim injunction against the book. This application was later withdrawn by her counsel in view of the fact that

I had by affidavit sworn to justify the words of which she complained. Then by a writ dated May 12th she commenced an action against Messrs. Harding & More Ltd., the publishers, and myself in the King's Bench Division of the High Court of Justice, London, to recover damages for libel and to obtain an injunction against its repetition. The case of *Stopes v. Sutherland and Others* arose out of the following passage in my book, the words complained of being printed below in italics :—

“ Exposing the Poor to Experiment ”

“ Secondly, the ordinary decent instincts of the poor are against these practices, and indeed they have used them less than any other class. But owing to their poverty, lack of learning and helplessness, the poor are the natural victims of those who seek to make experiments on their fellows. In the midst of a London slum a woman, who is a doctor of German philosophy (Munich), has opened a Birth Control Clinic, where working women are instructed in a method of contraception described by Professor McIlroy as ‘ the most harmful method of which I have had experience.’ When we remember that millions are being spent by the Ministry of Health and by Local Authorities on pure milk for necessitous and nursing mothers, on maternity clinics to guard the health of mothers before and after childbirth, for

the provision of skilled midwives, and on Infant Welfare Centres—all for the single purpose of bringing healthy children into our midst, *it is truly amazing that this monstrous campaign of birth control should be tolerated by the Home Secretary. Charles Bradlaugh was condemned to jail for a less serious crime.*”

The trial, which lasted for six days, was commenced on February 21st, 1923, before the Lord Chief Justice of England and a Special Jury. By her Statement of Claim the plaintiff alleged that my words meant and were intended to mean that she was taking advantage of the ignorance of the poor to subject them to experiments of a most harmful and dangerous nature ; that she was guilty of disgraceful, illegal, and criminal practices, for which she should be punished by a term of imprisonment ; and that she was a person with whom no decent or respectable persons should associate. In opening the case her leading counsel, Sir Patrick Hastings, with whom were Sir Hugh Fraser and Mr. Metcalfe, invited the defendants to justify the following defamatory elements in the alleged libel : that she had experimented upon poor people ; that her writings amounted to a criminal offence ; and that the check pessary which she recommended was a most harmful method of

contraception. The plaintiff was supported by a number of medical witnesses and by an ex-Cabinet Minister, who expressed their cordial approval and appreciation both of the work at her clinic and of her books. In the course of a long cross-examination, the plaintiff was asked the following questions :—

Q. I am asking you, madam, do you believe—I have a reason for asking it, because of some of the passages—that the Almighty is, I was going to say, supposed to have said, if I may say so without wrongness—do you say to my Lord and the jury that all that follows in these pages, *A New Gospel*, came from the Almighty God as a God-given message?

A. No, I say what I say ; that the words you have just read out that I redictated them, and if there are any things in it which are not right, they are due to my faulty memory in the moments which passed between its transmission to me and my redictation.

Q. Do not you say it is the retransmission of a message saying direct from the Almighty God through you?

A. I say that.

Both the publishers and myself had pleaded (1) justification, *e.g.*, that the words in their natural meaning were true in substance and in fact ; and (2) fair comment, *e.g.*, that the words, even if not

strictly true, were fair and *bona-fide* comment made without malice on a matter of public interest. I was defended by Mr. Charles, K C, Mr. Rabagliati, and Mr. Harold Murphy, instructed by Messrs Charles Russell & Co., London. For the publishers were Mr. Serjeant Sullivan, K C., and Mr. Theobald Mathew. By our own first defence we sought to prove the truth of all the defamatory elements in the alleged libel, and in support of that contention, evidence was given by myself and by some of the most distinguished gynæcologists in England.

On the fifth day the jury, after an absence of over four hours, found that the words were defamatory, that they were true in substance and in fact, that they were not fair comment, and awarded contingent damages of £100.

"In view of the finding of justification," the Lord Chief Justice, on March 1st, 1923, entered judgment for the defendants with costs.

In the opinion of the *Law Journal* ¹ · "There will be few who will dispute the service which has been rendered to the cause of public morality and social science by the judgment of the Lord Chief Justice" Moreover, the defendants were supported by the religious Press in England, Anglican and Catholic. In fact, the editors of the *Universe* and the *Tablet*

¹ March 3rd, 1923

were called upon at a later stage at the instance of the plaintiff to show cause in the Divisional Court why they should not be committed for contempt of court. This they did, and the rule against them was discharged, upon an undertaking and a contingent apology

From the Labour Press an interesting comment appeared in the *Workers' Dreadnought*¹: "Our sympathy with Dr. Stopes is lessened by her letters to the *Nation* defending the prosecution of Bradlaugh and Besant, Margaret Sanger, and the Aldreds for a birth control propaganda which, in effect, is the same as her own"

The plaintiff appealed to the Court of Appeal, where on July 20th, 1923, Lords Justices Bankes and Scrutton (Lord Justice Younger dissenting) reversed the judgment of the Lord Chief Justice, and directed judgment to be entered for the plaintiff

The publishers and myself then entered a joint appeal to the House of Lords, where we were represented by Mr Serjeant Sullivan, K C., Mr. Theobald Mathew, Mr Rabagliati, and Mr. Harold Murphy, instructed by Messrs Charles Russell & Co, London. Judgment was delivered on November 21st, 1924. The Lord Chancellor held that upon the summing up of the Lord Chief Justice, the jury had found the

March 10th, 1923.

truth of all the defamatory facts which constituted the sting or stings of the libel, which upon a careful reading might be divided into three parts.

(1) By the first two sentences, which must be read together, the defendants stated that the plaintiff was taking advantage of the ignorance of the poor to subject them to experiments. The jury had found this charge, which was plainly a statement of fact, to be true ; and passages had been quoted to their Lordships from the plaintiff's published works, and from the evidence in the case, which were amply sufficient to enable the jury so to find.

(2) By the third sentence of the alleged libel, the defendants stated that working women at the plaintiff's clinic had been instructed in a method of contraception of a harmful and dangerous nature. This charge, which was also a statement of fact, was found to be true.

(3) By the last two sentences of the alleged libel, the defendants in effect charged the plaintiff with carrying on her campaign by means of literature not less obscene than that for which Charles Bradlaugh was prosecuted, and of such a nature as to infringe the criminal law ; and this charge, the most serious of all, was also found by the jury to be true in substance and in fact. Their Lordships' attention was called to passages in the plaintiff's books upon which

the defendants had relied as supporting this charge, and the passages appeared to him to be of such a nature as fully to justify the finding of the jury. After finding such facts to be true, nothing remained in the libel to which the description of "unfair comment" could apply. There were three supposed statements of opinion: "the decent instincts of the poor," "monstrous campaign," and "less serious." There was no evidence on which a reasonable jury could find that, assuming that the charges enumerated above were true, these expressions of opinion constituted unfair comment. These expressions of opinion, which in gravity fell far below the substantive charge and added nothing to it, need not be separately justified. The Lord Chancellor therefore moved their Lordships that the appeal be allowed, and that the order of the Court of Appeal should be discharged and the judgment of the Lord Chief Justice restored, with costs above and below. Lord Finlay gave judgment to the same effect, while Lords Shaw and Carson held that the jury by their verdict had affirmed the truth of the whole libel and that therefore no question of the fairness or otherwise of comment could arise. Lord Wrenbury differed. Thus ended the Birth Control Libel Action, which lasted two and a half years, and cost the defendants £10,000, all of which was collected

from Catholics, rich and poor, in England, Scotland, Ireland and Wales.

The opposition of the medical profession to the use of contraceptives has also weakened. It would be difficult to find any purely medical society prepared to endorse the following resolution of the South-Western Branch of the British Medical Association¹: "That this Branch is of opinion that the growing use of contraceptives and ecbolics is fraught with great danger, both to the individual and to the race. That this Branch is of opinion that the advertisements and sale of such appliances and substances, as well as the publication and dissemination of literature relating thereto, should be made a penal offence" Yet that resolution was passed in 1905.

For good or ill, birth control has come to stay (save for some awakening of national awareness as has swept Italy and Germany), and whether we like it or not lower birth rates are to be expected in Britain and America. Under our present economic system and over-mechanised civilisation, very few can afford to have an unlimited family, and for that reason it is advisable to consider what is the best method of birth control, or, as a rigorist would say, which method is least harmful to individuals and to society.

¹ Supplement to *British Medical Journal*, March 18th, 1905, p 110.

CHAPTER III

CONTRACEPTIVES

By birth control is meant any method from the use of contraceptives to the practice of abstinence, whereby the size of a family is deliberately limited. Complete abstinence is practicable when separate rooms are available, but I am convinced that it may cause profound psychological changes and may be the cause of great domestic unhappiness. The couple may remain physically faithful, but one or both may be psychologically unfaithful, and in the ordinary quarrels of marriage, abstinence makes reconciliation more difficult. It would be well for those celibates who preach abstinence for the married to bear these facts in mind.

A most common method of birth control is *coitus interruptus*, withdrawal by the male before completion of the act. Of all methods this is the most risky, and I have known not a few unmarried girls who were "caught" in this way. I have also known others who, without loss of virginity, nevertheless became pregnant through permitting the

familiarity known as "almost," or "the love touch." A plain statement of these facts may do good, and cannot possibly do harm to anyone.

A practical objection to contraceptive appliances designed for women is that they are unreliable. The check pessary, or small occlusive pessary, is condemned by those who have specialised in the diseases of women as a most harmful method of contraception. The reason of that condemnation is simple. The check pessary can only act as a contraceptive when it dams back the natural secretions of the womb. Consequently *unless* fitted by an expert and frequently removed under conditions of *surgical* cleanliness, the check pessary becomes a most filthy and dangerous appliance. On the other hand, Professor McIlroy discovered that it was very difficult for a skilled gynæcologist to fit the check pessary to a woman, even when the woman was under an anæsthetic. It is therefore not surprising to learn that the check pessary is not effective as a contraceptive. During the birth control libel action, a medical supporter of contraceptives stated that the check pessary had failed to prevent pregnancy in twenty-five out of twenty-nine cases in which it was tried. Out of twenty-nine women who had been fitted with this appliance, twenty-five became pregnant within three months, in spite

of its use. He was speaking on oath of events within his own experience. This gynæcologist advocated the Dutch pessary, for which he claims good results. His results are challenged by the supporters of the check pessary, who say that the Dutch one fails in 50 per cent. of cases. The actual manufacturers of both the check pessary and the Dutch diaphragm advise women to supplement the use of these appliances with various douches and soluble pessaries containing chemicals to kill the sperms. The only points on which the partisans of contraceptives for use by women seem to agree is that the condom or sheath, as used by the male, fails in 50 per cent. of cases. Madame de Stael thought it "a bulwark against pleasure, and a cobweb against danger." With her second objection I do not agree. It has other disadvantages, to which I shall refer later, but it is the only contraceptive which can be used without consulting a doctor or a birth control clinic.

The latest method of female contraception in England is that under general anæsthesia from gas and oxygen a silver ring is inserted into the uterus. Before every menstruation the ring is removed under gas and oxygen, and after every menstruation it is replaced under gas and oxygen. This operation requires a surgeon and an anæsthetist, and a very moderate fee would be five guineas each time, or

ten guineas a month, or (since there are thirteen lunar months of twenty-eight days in a year) £136 10s per annum. As a Scotsman I deplore that a natural pleasure, common to humanity, should become a luxury. The birth and education of a child would be less expensive !

There is an old and widespread belief that it is dangerous to go against Nature, and one objection to contraceptives is that they are unnatural in the sense that they are unphysiological. Evidence has been cited by Professor Arthur Thomson, of Oxford, that natural congress of the sexes has certain profound and far-reaching physiological consequences, apart altogether from the fertilisation which results in pregnancy. These physiological consequences have been recognised for centuries, and are mentioned by Catullus in the following lines quoted by Professor Thomson ¹ :—

Non illam nutrix orienti luce revisens
Hesterno collum poterit circumdare filo.

The literal translation is : "The nurse revisiting her charge at daybreak shall not be able to encircle her neck with yesterday's thread." It was apparently the custom, and according to Havelock Ellis is still a custom in the south of France, for an old nurse to measure a thread round the neck of the

¹ *British Medical Journal*, January 7th, 1922

bride before night, and if next morning her neck had not become large enough to prevent the same length of thread from reaching right round, it was regarded as a sure sign that the marriage had not been properly consummated. This increase in the size of the neck is associated with a change in the thyroid gland, and the changes which this gland undergoes during puberty, during menstruation, and during pregnancy are well known. Professor Thomson also states that it is recognised amongst musicians that the female voice never attains to its full pitch of excellent tone until marital relations have been established. Sir W. Arbuthnot Lane, himself a neo-Malthusian, considers that the absorption of certain substances after sexual congress has a beneficial influence on the health of the woman. In a previous book ¹ I speculated whether, under natural conditions of congress, there is not a mutual biological reaction that makes, amongst other things, for physical compatibility. It is only necessary to add that, from anatomical and physiological evidence, this absorption of vital substances by the woman is greatest from the womb. Consequently there is no known method of artificial birth control whereby pregnancy can be prevented that does not also hinder or absolutely prevent, as with the

¹ *Birth Control*, Harding and More, London, 1922.

condom, this beneficial absorption. For that reason, every contraceptive is, from the physiological point of view, unnatural.

The birth-rate of England and Wales is now the lowest in Europe, but nevertheless there are optimists who maintain that three healthy children in a family are better than six unhealthy children. That assurance is a typical example of how a true statement may carry a false implication. Obviously it is better for the nation that all children should be healthy. The false implication is that children in a large family are likely to be less healthy than children in a small family. In point of fact, all the evidence points to the contrary.

The standard of health amongst the children of 500 very poor parents in Hull was investigated by Dr. Helen Gamgee. The families were selected at random, and were then divided into two groups according to the number of children.

One group contained small families of fewer than five children ; the other group consisted of large families, where there were five or more children. It was then discovered that the health of mothers and children was better amongst the large families.

This is not really surprising, because the large family has long been recognised as the best school for the development of character in parents and in children.

Moreover, it is certain that the children of a good mother will always be better cared for than the children of a careless mother, irrespective of wages and housing conditions, or even if the careless mother has fewer children than the good mother.

This fascinating question was also investigated by the late Dr. John Brownlee, Director of Statistics to the Medical Research Council. He went back to the figures of 1871 because : " If present-day statistics were chosen, as there must be more restriction of births amongst the better classes, where the infantile mortality is low, a correlation between high fertility and high infantile mortality would at once be obtained.

" To use such figures is to work with loaded dice."

The italics are mine. After exhaustive mathematical investigation Dr. Brownlee concluded that there is no evidence to show that large families are more unhealthy than small ones, and the statement that it is better to have three healthy children than six unhealthy ones has no apparent foundation.

In spite of ante-natal care the mortality of women during and after childbirth is increasing, and in London this mortality is greater in the richer boroughs such as Westminster and Hampstead than amongst the poor of Poplar. Maternal mortality

increases with the age of the mother. It is safer for a woman to have a child in her twenties than in her thirties. Hence if conception be delayed to suit economic circumstances, the risk of childbirth is increased. Another question which cannot be ignored is whether all this tampering with the genital tract of women may not be harmful and a cause of that dread condition, puerperal fever. As Alan MacKillop writes¹: "At the present moment a great deal is being said in Australia on the subject of maternal mortality. Not only medical men, but politicians and pressmen, have spoken on the matter. In some cases the reports issued are alarming. The chief question which arises, when a matter of this nature, bearing upon the well-being of the community and the future of the race, is being discussed, is: How to remedy the evil?"

"Leading up to that question is a primary one, namely: What is the cause of the evil? For, naturally, if the cause is not accurately known the hope of applying a remedy effectively is very remote.

"It is not for a layman like myself to allow his presumption, through ignorance, to soar so high as to dare to present a remedy. We have too many quacks already, in politics and in the healing art, the one experimenting crudely on the body politic,

¹ *Brisbane Sunday Mail*, March 24th, 1935

and the other practising cruelly on the human frame, without my adding to their number.

“What has encouraged me to write was the appearance in local journals, quite recently, of the expression of opinion, on the part of one interested in this subject, that ‘there is need for providing a greater measure of trained assistants to attend mothers.’ In other words it is hinted that maternal mortality is due in whole or in part to the absence of trained nurses and experienced surgeons.

“While neither able nor willing to contend that such absence may form an important element in the causes leading up to maternal mortality, I desire to show that there may be a danger of paying too much attention to this alleged cause, and to providing means for removing the same, to the neglect of other causes equally pernicious, and calling for suppression. Lack of skill cannot possibly be the main cause, as the following facts should prove.

“Readers of Neil Munro’s works are familiar with the character, ‘The Skilly Woman,’ whose practice in the remote Highlands and islands of Scotland has to be depended on as a substitute for the science and the art of trained nurses and experienced physicians. And yet maternal mortality there is very low indeed.

“ ‘The Skilly Woman’ never had any greater training for her profession than the facts that she herself was a mother, had reared a family, and was old and respected. Having spent a third of a century among a Hebridean community averaging, year in and year out, about 10,000 souls, a population where there never was a trained nurse, and where only two medical men were in practice, I am able to testify that lack of trained helpers did not result in an alarming amount of maternal mortality.

“ For the sake of accurate statistics, I shall confine myself to noting the facts concerning the inhabitants of one island with which I was very intimate. On that island there were 46 married couples, who were married between 60 and 75 years ago, and whose families were well known to me. All these people, except one or two, are dead

“ In eight cases the wives died before their husbands. In 38 cases the husbands died leaving widows. Not one of these women died under 50 years of age, and the vast majority of them exceeded the ‘three score and ten years’ spoken of by the Psalmist. These parents reared 184 children, who came to man’s and woman’s estate. The families ranged from one to 11.”

That is most interesting, and now Professor Daniel

Dougal writes in the *Manchester Medical School Gazette* as follows ¹ :—

“ The public should realise that they are to some extent responsible for the mortality rate, because, by demanding contraceptive devices, termination of unwanted pregnancies, and painless and shorter labours they are weighting the function of reproduction with a load, which frequently causes it to break down and become pathological.”

There is ample other evidence that artificiality in life is fraught with disastrous consequences. During the past fifty years, the mortality from cancer of the breast has doubled, and this form of cancer is 45 per cent. higher in unmarried than in married women. Moreover, of all cases of cancer in England, 18.9 per cent. are cancers of the breast, whereas in Japan, of all cases, only 1.8 per cent. are cancers of the breast. Furthermore, surgeons have noted that cancer of the breast is more common in sterile married women than in women who have borne children, and also that in Japan it is the custom for women to suckle their children for eighteen months. Indeed, the best advice to be given to a woman who wished to avoid cancer of the breast would be to marry, to have children, and to nurse her children.

¹ May, 1935, p. 115

CHAPTER IV

THE SAFE PERIOD

THE most natural method of birth control is the use of the safe period. Lest any reader thinks that after having condemned contraceptives I am illogical to commend the safe period, it is advisable to state the fundamental differences between the two methods. By the use of contraceptives the beneficial absorption of hormones is either partially or completely prevented, whereas by use of the safe period this absorption is unrestrained. When contraceptives are used there is no need to exercise any self control, whereas with the safe period self control must be exercised for at least eight days in every month. Again, some people have an æsthetic dislike of contraceptives, but not of natural intercourse. Moreover, for those who object to contraceptives on ethical and religious grounds, the safe period offers a solution to a most difficult problem. The Catholic Church prohibits the use of contraceptives, but permits the use of the safe period. The safe period does not represent heroic

virtue, but it does call for the exercise of a reasonable amount of self discipline. If, then, the safe period be permitted, an accurate knowledge of what it is should be available for all engaged or married couples. The use of the safe period has many

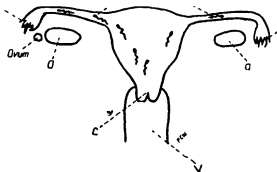


FIG 1 —F Fimbria S Sperms O Ovary C Cervix
V. Vagina

material advantages over contraceptives, of which for poor people expense is not the least

In every normal woman of child-bearing age a process called ovulation occurs once a month. To explain ovulation a diagram is essential (Fig. 1). From the ovary, either the right or the left, an ovum or tiny egg (usually one, but sometimes two, three, four, and, in the rare case of quintuplets, five) is

discharged into the abdominal cavity. The ovum is caught by the fimbriæ or tentacles at the free end of the Fallopian tube, along which it is wafted by ciliated cells (cells having a whip-like attachment) to the uterus or womb.

If the ovum, either in the uterus, or in the Fallopian tube, is penetrated by a sperm, the essential element in the male seed, the ovum is fertilised, attaches itself to the inner membrane of the womb, and develops into an embryo which becomes a child. As soon as the ovum begins to develop menstruation ceases until that pregnancy is over. If the ovum is not fertilised it dies, or more accurately loses the property of being fertilised, in a few hours. Again, if the ovum be not fertilised, menstruation, or the monthly period, will begin in most women twelve or thirteen days after ovulation. In no case can menstruation begin sooner than twelve or later than sixteen days after ovulation. During menstruation the inner lining of the womb is shed, after which a new lining grows in order to provide a suitable soil on which the next ovum, discharged during ovulation, may attach itself if fertilised.

The menstrual cycle is the number of days from the first day of one "period" to the last day before the next period begins. Thus if the menses began

on January 1st, and again on January 29th, there would be a cycle of twenty-eight days. The following line represents a cycle of twenty-eight days, the underlined figures being the dates on which menstruation began.

January.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
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24
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26
27
28
29

For many years menstruation in the human female was regarded by all except the Jews, as analogous to "rutting" in animals. In animals "rutting"

But the male sperms, of which millions are discharged at the end of intercourse, may live for two or three days, in rare cases up to eight days, in the female genital tract. On this point both Ogino and Knaus are in agreement. These minute sperms, which consist of a small head and a comparatively long tail, are mobile. By a lashing movement of the tail they swim up the female genital tract into the womb and into the Fallopian tubes in search of an ovum. Only one sperm out of millions penetrates the ovum, and only the head penetrates, after which the tail drops off. Once fertilised the ovum is immune against the attacks of other sperms.

As the sperms can live for three days, intercourse on the tenth day could result in fertilisation of an ovum discharged on the thirteenth day. This means that we must add another three days to the days in the menstrual cycle when intercourse may be followed by pregnancy. The line is extended as follows, the figures in italics indicating the days on which intercourse may be followed by pregnancy in the above twenty-eight day cycle.

(Many factors, especially ill-health or anxiety, may prolong the menstrual cycle. Thus the fear of an unwanted pregnancy may cause a woman to "miss" a period, although in point of fact she is not pregnant.)

January.	$\frac{1}{2}$			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10	19	} Life of Sperms	} Time of Fertility
	11	18		
	12	17		
	13	16	} Days of Ovulation	
	14	15		
	15	14		
	16	13		
	17	12		
	18	11		
	19	10		
	20	9		
	21	8		
	22	7		
	23	6		
	24	5		
	25	4		
	26	3		
	27	2		
	28	1		
	29			

On the days in italics intercourse may be followed by pregnancy. On the days not italicised the woman is sterile, except in the rare cases of men whose sperms may live for eight days. In such cases intercourse on any day from the fifth up to the seventeenth might lead to pregnancy. Thus—

January.

1				
2				
3				
4				
5	} Rare extra 5-day life of sperms.	} Time of Fertility		
6				
7				
8				
9	} Usual 3-day life of sperms			
10				
11				
12	} Days of ovulation			
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
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30				
31				

The twenty-eight day cycle is most frequent, but cycles of twenty-six, twenty-seven, twenty-eight, twenty-nine and thirty days may occur in the same woman. These cycles with their fertile days are here set out—the underlined figures representing the onset of menstruation, and the figures in *italics*, followed by a vertical line, representing the fertile period, allowing for sperms a life of three days in the woman.

January.

$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20
21	21	21	21	21
22	22	22	22	22
23	23	23	23	23
24	24	24	24	24
25	25	25	25	25
26	26	26	26	26
27	27	27	27	27
<u>28</u>	<u>28</u>	<u>28</u>	<u>28</u>	<u>28</u>
		<u>29</u>	<u>29</u>	<u>29</u>
			<u>30</u>	<u>30</u>
				<u>31</u>

If every woman were as regular as a chronometer the safe period would need no further explanation, but the cycles vary and at the beginning of a cycle it is impossible to tell to the day how long it will last. In a thirty day cycle the first sterile period, which precedes the fertile period, lasts up to the eleventh day. Yet if a cycle of thirty days was followed by a cycle of twenty-six days, the eighth,

ninth, tenth, and eleventh day would be within the time of fertility. Conversely, in a cycle of twenty-six days the second sterile period, which follows the fertile period, would begin on the sixteenth day. Yet if a cycle of twenty-six days were followed by a cycle of thirty days the sixteenth, seventeenth, eighteenth and nineteenth day would be within the time of fertility. A woman whose usual cycle is twenty-eight days may have other cycles of from twenty-six to thirty days. In one case when the onset of menstruation was marked by a patient (for a different purpose) on a temperature chart over a period of three years, I found cycles of twenty-six days, of twenty-seven days, of twenty-eight days, of twenty-nine days and of thirty days.

Before beginning the use of the safe period every woman should by use of a calendar note the length of her cycles over a period of at least six months. She will then know her longest and shortest cycles. N.B. No woman whose shortest cycle is less than twenty-six days should rely on the first safe period, and no woman whose longest cycle is more than thirty days should trust to the second safe period. On her shortest cycle a woman can base the duration of her first sterile period. This is easily stated.

From the onset of menstruation the first sterile period

- lasts for seven days in a twenty-six day cycle
- lasts for eight days in a twenty-seven day cycle.
- lasts for nine days in a twenty-eight day cycle.
- lasts for ten days in a twenty-nine day cycle.
- lasts for eleven days in a thirty-day cycle.

From her longest cycle she must find the day on which the second sterile period begins. Thus if the shortest cycle is twenty-six days, the average twenty-eight days, and the longest thirty days, she must at the beginning of every cycle regard the first sterile period as ending on the seventh day, and the second sterile period as beginning on the twentieth day. It will be noted that in all five cycles up to thirty days the twentieth day is within the sterile period. In these calculations the hour at which menstruation begins should be accurately recorded, because the time when the first safe period ends, and the second safe period begins, dates not only from the day, but also from the hour at which the last period began. Thus, if the shortest cycle be twenty-six days, and menstruation begins at 11 a.m. on January 1st, the first safe period ends at 11 a.m. on January 7th, and if the longest cycle be thirty days the second safe period begins at 11 a.m. on January 20th. This accuracy is essential. It is not enough to say that because menstruation began on January 1st that the first safe period ends

on January 7th, and that the second safe period begins on January 20th. In the above example intercourse after 11 a m on January 7th, or before 11 a m on January 20th, might lead to pregnancy

In America and on the Continent slide-rules have been made to enable a woman to calculate the date on which these safe periods begin. At the end of this chapter the reader will find a perpetual calendar, which gives the same information. I hope I have succeeded in making this clear, because once, having explained the safe period to a lady, I received two weeks later a reply-paid telegram: "Is to-morrow safe?" Having looked up her cycle in my notes I was able to send this reply: "Yes, also to-night"

The researches and views of Knaus and Ogino have been challenged by several observers, but there is a good deal of evidence to prove the existence of these fertile and sterile periods. Thus in the German army 400 furloughs were granted to husbands, the furlough beginning twenty days after the onset of menstruation in their wives. Of these 400 furloughs only one resulted in a pregnancy. Having regard to human nature that single pregnancy cannot be regarded as an exception to the rule.

Most remarkable is the fact that the time of the fertile period was known to Moses. In the

Mosaic law, still observed by orthodox Jews, the woman is unclean for fourteen days after the onset of menstruation. During these fourteen days intercourse is unlawful. Relations are thus resumed at the time of ovulation in the middle of the fertile period. Partly by observation of this law the Jews in spite of persecution have increased and multiplied. Yet over 3,000 years had to elapse before two scientists came to demonstrate the actual working of that law. It is also clear that healthy people who wish to have children have no need of slide-rules or almanacks. They will find all they need to know in Lev. xv. 19-28.

The essential differences between the use of contraceptives and the safe period may be summarised under five headings. In the use of the safe period—

1. No direct mechanical obstacle is used to prevent pregnancy ;
2. There are no ill effects on the health of the man or woman ;
3. The intercourse is physiological.
4. It is a rightful use of liberty, just as entire abstinence would be.
5. Self-control is practised.

THE SECOND SAFE PERIOD

JULY, AUGUST, OCTOBER, DECEMBER

it is 26 days,

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14

→ ← Day in the next month →

cle is 27 days.

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

→ ← Day in the next month →

cle is 28 days.

→ ← Day in the next month →

cle is 29 days.

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
← Day in the next month →

cle is 30 days.

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
← Day in the next month →

SEPTEMBER AND NOVEMBER

ble is 26 days.

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Day in the next month

ble is 27 days.

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
—Day in the next month—

MONTHS OF APRIL, J

Menstruation began on the .. 1 2 3 4 5 6 7 8 9 10
 safe Period begins on the 18 19 20 21 22 23 24 25 26 27
 ← Day in the same month—

Menstruation began on the 1 2 3 4 5 6 7 8 9 10
 safe Period begins on the 19 20 21 22 23 24 25 26 27 28
 ← Day in the same month—

Menstruation began on the 1 2 3 4 5 6 7 8 9 10
 safe Period begins on the 20 21 22 23 24 25 26 27 28 29
 ← Day in the same month—

MAY

Menstruation began on the . . . 1 2 3 4 5 6 7 8
 safe Period begins on the . . . 16 17 18 19 20 21 22 23
 ← Day in the same month—

Menstruation began on the . . . 1 2 3 4 5 6 7 8
 safe Period begins on the . . . 17 18 19 20 21 22 23 24
 ← Day in the same month—

Menstruation began on the . . . 1 2 3 4 5 6 7 8
 safe Period begins on the . . . 18 19 20 21 22 23 24 25
 ← Day in the same month—

Menstruation began on the . . . 1 2 3 4 5 6 7 8
 safe Period begins on the . . . 19 20 21 22 23 24 25 26
 ← Day in the same month—

Menstruation began on the . . . 1 2 3 4 5 6 7 8
 safe Period begins on the . . . 20 21 22 23 24 25 26 27
 ← Day in the same month—

SEPTEMBER AND NOVEMBER—continued

cycle is 28 days,

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
19	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

→ ← Day in the next month

cycle is 29 days,

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

→ ← Day in the next month

cycle is 30 days,

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

→ ← Day in the next month

FEBRUARY

cycle is 26 days,

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14

→ ← Day in the next month

cycle is 27 days,

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

→ ← Day in the next month

cycle is 28 days,

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

→ ← Day in the next month

cycle is 29 days,

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

→ ← Day in the next month

cycle is 30 days,

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

→ ← Day in the next month

MONTH OF FEBRUARY

		If, when the longest									
Menstruation began on the	..	..	1	2	3	4	5	6	7	8	9 10
Safe Period begins on the	..	..	16	17	18	19	20	21	22	23	24 25
		← Day in the same month →									

		If, when the longest									
Menstruation began on the	..	..	1	2	3	4	5	6	7	8	9 10
Safe Period begins on the	..	..	17	18	19	20	21	22	23	24	25 26
		← Day in the same month →									

		If, when the longest									
Menstruation began on the	..	.	1	2	3	4	5	6	7	8	9 10
Safe Period begins on the	..	.	18	19	20	21	22	23	24	25	26 27
		← Day in the same month →									

		If, when the longest									
Menstruation began on the	..		1	2	3	4	5	6	7	8	9 10
Safe Period begins on the	..		19	20	21	22	23	24	25	26	27 28
		← Day in the same month →									

		If, when the longest									
Menstruation began on the	..		1	2	3	4	5	6	7	8	9 10
Safe Period begins on the	..	.	20	21	22	23	24	25	26	27	28 29
		← Day in the same month →									

The Safe Period is physiological, the use of contraceptives is unphysiological, and in that fact alone these two methods of birth control are as different as day is from night. Yet there are some who profess to think it inconsistent that anyone who condemns contraceptives should advocate the Safe Period. To such critics I would commend the following words of George Bernard Shaw : ¹

¹ *Proceedings of Medico-Legal Society, London, July 7th, 1921*

IN LEAP YEAR

cycle is 26 days,

1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
6	27	28	29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

→ ← Day in the next month →

cycle is 27 days,

1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
7	28	29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

→ ← Day in the next month →

cycle is 28 days,

1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
8	29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

→ ← Day in the next month →

cycle is 29 days,

1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

→ ← Day in the next month →

cycle is 30 days,

1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

→ ← Day in the next month →

"I may say that I am in favour of birth control. I am in favour of it for its own sake. I do not like to see any human being absolutely the slave of what we used to call 'Nature.' Every human action ought to be controlled, and you make a step in civilisation with something that has been uncontrollable. I am, therefore, in favour of control for its own sake. But when you go from that to the methods of control, that is a very different

thing. As Dr. Routh said, we have to find out methods which will not induce people to declare that they cannot exist without sexual intercourse."

The contraceptists, on the other hand, tell us that all continence between married people is undesirable, if not impossible. A monstrous assertion ! There are times within every normal marriage, for example, for three months prior to the birth of a child, and most certainly for three months after the birth of a child, when absolute continence should be practised. Are we expected to believe that the majority of men have so little respect for themselves or for their wives that they cannot endure that period of abstinence, but must needs have relations with other women ? If that be not the suggestion, then I ask why, if continence can be observed for a period of three or six months, it should be impossible or unduly difficult for at most twelve days a month in addition to the "period" ?

As a method of family limitation, partial continence in marriage has none of the disadvantages or dangers that attend the use of contraceptives. In the first place the sex love of two people finds expression in a normal act, with which there is reason to think certain physiological benefits are related ; whereas the use of contraceptives implies an act which is unphysiological. In this limita-

tion of intercourse there are no risks to physical or mental health ; whereas the risks of contraceptives have already been described. There are only two infallible methods of preventing pregnancy, absolute continence or sterilisation, but the limitation of intercourse is a much more effective method of preventing pregnancy than many unreliable contraceptives. It has been said that both this limited intercourse and the use of contraceptives have one thing in common, namely, that both arise from the desire to avoid pregnancy. That is quite true, but this does not prove that the two methods are similar in principle. A desire for money may lead one man to work hard, and another to steal. Are hard work and theft to be placed therefore in the same category ? In the one, pregnancy is avoided by the exercise of self-control ; in the other, by indulgence in what George Bernard Shaw once rightly described as mutual self-abuse. By self-restraint men, women, and nations have achieved greatness. By self-indulgence all have perished. Shaw himself has written " Voluptuaries prosper and perish."

CHAPTER V

THE SINS OF THE FATHERS

EVERY child inherits through its parents those physical features common to the race, and often the child also inherits features, such as colour of hair and eyes, which are not common to the race. All these are inborn characteristics, but some children show additional features or variations not manifest in their parents. Thus two ordinary individuals may produce a genius or an imbecile. Certain physical and mental defects apparent in one or other parent may also appear in the child. Hæmophilia, whose victims are known as "bleeders," is inherited, and in a very peculiar way. In "bleeder" families, the females are not bleeders, but if they marry the disease is likely to be transmitted to over 50 per cent of their sons. On the other hand if a male "bleeder" marries a healthy woman the disease is very seldom transmitted to their offspring. Fortunately hæmophilia is a comparatively rare disease.

Of the great diseases insanity alone is inherited,

and inheritable. There is no inherited predisposition to tuberculosis. Karl Pearson has shown that in cancer there is no inheritance. Syphilis is not inherited, although it may be transmitted. The prevention of insanity would be a mighty step in civilisation.

At the Middefart Asylum, Denmark, Dr. Lange found that seventy patients came from forty-four families. In most of these families only one member had been certified insane, but in two others two, three and even four members had been admitted to the asylum. All this insanity was inherited from mentally diseased ancestors. Amongst their parents, uncles, aunts, first cousins, and grandparents, Dr. Lange traced no fewer than 358 cases of mental or nervous disease. These forty-four families had produced in the course of a few generations no less than 428 cases of insanity or of nervous disease. If the grandparents of the seventy patients had not married there would have been a great saving of misery to humanity, and of money to the State of Denmark.

Dr. Lange was about to publish these facts when fortunately for truth he remembered the collaterals. Instead of publishing his book he devoted ten years to more research, and was able to trace the majority of the healthy collaterals—brothers, sisters, cousins, uncles and aunts—in the latest generations of twenty-

eight out of the forty-four families represented in his asylum. The results were remarkable. Inside these twenty-eight families he found in addition to ordinary folk, two cabinet ministers, one ambassador, three bishops, eight clergymen, three admirals, three generals, three judges of the Supreme Court, four headmasters, eight consulting physicians, nine university professors, twenty-three doctors of science or arts, together with a large number of members of Parliament, town councillors, physicians, teachers, business men, Government officials and finally two individuals holding positions so prominent in the State that the nature of their calling could not be disclosed without revealing their identity. He also found seventy-two people—sixty-two men and ten women—who by their ability had won distinction in other paths of life—twenty poets, fifteen who were either painters, sculptors, architects or engravers, nine musicians or composers, eight actors and actresses, two inventors and eighteen authors. If the grandparents of these twenty-eight families had not married the absence of insanity in their non-existent descendants would have been no compensation for an infinitely greater loss to the world—a world in which there is more good than evil.¹

These facts raise problems of vital interest. How is it that the taint of insanity was not transmitted to every member of these twenty-eight families? The answer is that when the taint of insanity, degeneration or vice appears in a family, either the family or the taint is extinguished. We think of a family as a straight line of descent, as witness the word lineage. In truth it is not a line at all, but a transient point, consisting of father, mother and children, in whom innumerable strains of inheritance converge. When the children marry they form new families in which innumerable other strains of inheritance converge. It is only in name that a family survives, and a man may have the name Plantagenet without having more than one-thousandth part of Plantagenet blood in his veins. When a taint appears in a family it is not transmitted indefinitely as the name of the family may be transmitted.

The human race has existed for millions of years, and lunacy, in the form of idiocy, appears even amongst the most primitive savages. Yet the earth is not peopled by lunatics, although in the East lunatics are actually revered. Why is the earth not peopled by lunatics? According to the modern theory of degeneration the taint of lunacy or vice may be manifest through four generations of a

family—and then dies out. That is the modern theory, but in point of fact it is stated word for word, in the Book of Exodus : “ I, the Lord Thy God, am a jealous God, visiting the iniquity of the fathers upon the children, unto the third and fourth generation of them that hate Me ; and showing mercy unto thousands of them that love Me, and keep my commandments.”

Within four generations either the family has disappeared, or the taint has died out, and a new family has arisen like the Phoenix from the ashes of degeneration. In the following illustration of this last truth I have disguised any particulars which could possibly lead to identification. The first family was formed by the marriage of a male deaf-mute to the daughter of two first cousins ! Now, there are cases of acquired deaf-mutism, due to measles or some other infection during infancy, and in these cases the defect is not transmitted to the children. Thus there is an able and well-known living writer, both of whose parents were deaf-mutes. The male deaf-mute to whom I refer did not acquire, but inherited, this taint, and his germ plasm was tainted because he produced one epileptic child, one imbecile child, one child with a cleft palate, and two normal boys. The three defective children died unmarried. One of the

normal boys rose to a high position in a British colony, married and had four children, all healthy, whose subsequent history is unknown to me. The other normal boy became *world famous*, married, and had five healthy children. Of the third generation now living all I shall say is that the men won high distinctions on active service in the Great War, that all the girls are married, and that all the children of this generation are healthy. As there are many lunatics at large it is advisable to add that I am not advocating the marriage of genetic deaf-mutes to the daughters of first cousins. The history here recorded merely proves that we know very little about the laws of human inheritance.

One of the most distinguished families in the United States is named Edwards. American Eugenists have held up this family as an example to the world. Within the last few generations this family has produced more Senators, members of Congress, and professors, than any other family in the Union. It was left for Dr. F. C. Shrubbsall of London to explore their family history a little farther back, and to discover that all these worthy people were descended on the female side from a moral imbecile ! The taint has died out.

The term "moral imbecile" is a misnomer, because such people are not imbeciles but moral

defectives Their intelligence is often above the average, but they have no moral sense of right or wrong. As children they are a grave problem to parents, teachers, doctors and magistrates. They cannot be certified as mental defectives, and most magistrates are loath to send young offenders to prison. A London magistrate told me about a girl of sixteen charged with outrageous immorality. From the dock she admitted the offence, told the magistrate that whatever he did she would repeat the offence, and then gave a high kick in the direction of the jailer. "What can I do?" said the magistrate to me; "I don't want to send her to prison. Even if I did it would do her no good. I have remanded her for seven days, but nobody can tell me what to do with her. These moral defectives are hopeless cases." Yet if the moral defect be the desire to acquire money, without any regard to the rights of others, the moral defective, if able to keep out of the hands of the police, will take everything he or she can obtain from the rest of us, and may die in circumstances of ease. The greatest parasites in the community are neither mentally deficient nor feeble-minded. The man or woman who has been swindled by an unscrupulous financier may be mentally deficient, but the swindling financier is morally defective. Hitherto every civilised com-

munity has sought by positive law to protect the mentally deficient from the morally deficient. Otherwise we would breed a race of scoundrels, male and female.

Where there is inbreeding of anti-social tendencies, as in the marriage of two bad stocks, or in the marriage of two members—say cousins—of one bad stock, the taint is more likely to be transmitted to their children. Of this fact the Jukes family in America is an example. This family was discovered in 1877 by Mr. Dugdale. In order that a dog may not be given a bad name the name of Jukes was and is fictitious. As retold by Dr Estabrook in 1918 the story is as follows :

“ Into an isolated region now within two hours railroad journey of New York, there drifted nearly a century and a half ago a number of persons whose constitution did not fit them for participation in a highly organised society. There were of course various degrees of inadequacy ; and the retired, well-wooded and well-watered valley gave many of the immigrants a chance to pull themselves together. It was a change of nurture, and some profited by it. But perhaps the conditions were too easy. Among the immigrants who did not profit by the change were some uncontrolled types who had been ‘ assisted out ’ of Europe, with a strong tendency towards evil. From such came the Jukes. Here are some of them—Max, the hunter and the

fisher, the jolly, alcoholic ne'er do well : Lem, the stealer of sheep : Lawrence, the licentious, free with his gun : Margaret and Delia, the wantons : and Bell, who had three children by various negroes."

The point to seize is that these degenerates, the outcasts of Europe, were more or less segregated in an isolated valley where inbreeding was not only possible but most probable. Mr. Dugdale found that between 1800 and 1877 this family had produced 709 descendants. Of these 540 were male Jukes blood, and 169 of "X" blood, which had married into the Jukes family. In this progeny there had been 140 criminals and offenders, 60 habitual thieves, and many degenerates. In three-quarters of a century this family had cost the State over a million dollars. In 1915 there were 705 adult descendants of the Jukes family. Of these 305 (or 43 per cent.) showed anti-social tendencies, including 41 criminals, 103 mental defectives, and 83 drunkards. But 57 per cent. of the descendants were now useful members of society. Dr. Estabrook describes 152 as industrious, and sixty-five as good citizens. Of these last he says : "The bad traits which have held down their brothers and sisters have become lost, and they are fountain-heads of new families of socially good strain." And thus, even

when there has been inbreeding, the evil taint tends to disappear, because so far as I know the Jukes family history is the worst that has ever been recorded.

As regards the marriage of tuberculous patients opinion has changed during the centuries. At the end of the eighteenth century Rosiere de la Chasagne claimed that pregnancy had a favourable influence on phthisis. That was before the discovery of the tubercle bacillus, and at a time when the diagnosis between simple anæmia (chlorosis) and tuberculosis was difficult; and it is certainly true that after marriage the anæmic girl may develop into a robust woman. In the nineteenth century anyone threatened with tuberculosis was advised not to marry, whereas nowadays the advice given depends on the stage and prognosis of the disease in any individual case. There are many stages of tuberculosis. Everyone is probably tuberculous in the sense that over 90 per cent of the healthy population have at one time or another been infected by the tubercle bacillus. In the vast majority of people the disease never develops because the resistance of the tissues has overcome the infection. Even when the disease develops there are many different types of case—acute, chronic, mild, and severe. Under suitable treatment the disease may become arrested, and its lesions may remain healed for

years. No one who is suffering from active tuberculosis should marry, but once the disease is known to be firmly arrested there is no reason why they should not marry. I advise that if the patient remains clear of symptoms and signs of active disease for a period of two years he or she may marry, and if they do marry there is no reason to believe that they will transmit the taint of tubercle to their offspring. That does not imply that the patient is permanently cured. The disease may recur, although it is possible by means of tuberculin to raise immunity a million fold.

When pregnancy occurs in a woman with active tuberculosis my impression is that during the course of the pregnancy symptoms and physical signs are ameliorated. Nevertheless, of one thing I feel certain—that whatever the effect of pregnancy on tuberculosis the course of the disease is almost invariably accelerated after the birth and under the strain of nursing the child, so that the last state of the woman is worse than the first.

Apart altogether from ethics, medical opinion is sharply divided on the advisability of inducing abortion when a tuberculous woman is found to be less than three months pregnant. Both sides have published statistics, and the figures are at variance. One set of figures show that the cases in which

abortion was induced died sooner than the cases in which pregnancy was not interrupted. The other set of figures indicate that when pregnancy was terminated by abortion the life of the woman was prolonged, in comparison with the lives of women whose pregnancy was not interrupted.

Some adopt a conservative view, and would only interfere when tuberculosis has developed for the first time in a woman less than three months pregnant. Whatever be the after history of such cases it is impossible to consider cause and effect, because the course of tuberculosis is so variable and so difficult to foresee.

It is not even possible to compare accurately the after histories of pregnant tuberculous women with those of non-pregnant tuberculous women, unless the cases were in the same stage of the disease and in the same age groups. For that reason the statistics of Forssner, showing that pregnancy had no ill-effects on the course of the disease, cannot be accepted.

Nor is it possible to ignore the fact that these differences in opinion are largely national. Physicians in Germany, Switzerland, and Italy have mostly been in favour of abortion in tuberculosis. Thus Marigliano declared in 1907: "It is necessary to interrupt pregnancy." The French in the

main oppose this teaching. Speaking of tuberculosis as an indication for the induction of abortion, Rist of Paris said in 1924: "This indication does not exist. To defend it is a social crime. Not only has it not been proved that the interruption of gestation arrests the development of tuberculosis, but I am convinced that it aggravates the development."

On the other hand, I cannot accept the view of those French physicians who believe that pregnancy is a benefit to a tuberculous woman—because the enlarged uterus presses on the diaphragm and so limits the movements of the lung as in a pneumothorax! That is surely special pleading *in excelsis*.

Tecon, in 1913, noted an exacerbation of tuberculosis in one-fifth of the cases in which abortion had been induced. That can be understood, and I have seen latent tuberculosis lit up into acute tuberculous bronchopneumonia after a gastro-enterostomy.

In favour of abortion the most favourable figures are those of Czackes (Strasbourg) in 1926. He compared the after histories of pregnant tuberculous women, whose pregnancy was not interrupted, with those of pregnant tuberculous women whose pregnancy was artificially aborted. At the end of three and a half years there were 17 per cent. more survivors

amongst the women who had been aborted Unless the cases were in the same clinical groups the figures are worthless. Only the anatomical classification—amount of lung involved—is given, and clinically that is the least accurate method of classification. Leaving that objection aside it comes to this, that in order to prolong the lives of seventeen tuberculous women for three and a half years, 100 children were sacrificed ! Had the potential mothers been cured the case for abortion would have been stronger, but as their lives were merely prolonged a few weeks or months longer than those who had a child—the price seems rather high.

In advanced pulmonary tuberculosis the premature induction of labour may be necessary in the joint interest of the mother and child. On that point there can be no medical difference of opinion. There is no statistical evidence to support the popular impression that tuberculous patients are more fertile than other people, and so far as I have been able to judge they are no more erotic than the rest of humanity.

The fact that some specialists in tuberculosis believe in good faith that abortion benefits the patient has been recognised by the qualified professional abortionist. On one occasion I had proof of this. A doctor whom I had met once or twice

came to me and asked if I would see a girl of twenty-three who had, so he said, "a spot of tubercle at the right apex." I told him that I would see her with pleasure, and if necessary would do the tuberculin and X-ray tests. This assurance did not altogether please him, because he added : " You've got to find tubercle " Somewhat nettled, I replied that if it was there I would find it. Even that did not please him, and then " the hyena of the womb " came out of the bag . " It's a very sad case. She's three months gone I've got a surgeon who will empty her, but we want a certificate worth having that she has tubercle and that the pregnancy would endanger her life " When I told him that he had come to the wrong shop, his answer was : " All right, please yourself But I can tell you one thing about the case—there's £200 going abegging ! "

The scheme is diabolically clever. The great " hyenas of the womb " take no risks, and in this team work honour amongst thieves is assured, because no member of the team can possibly betray the others without betraying himself The abortion is done in a respectable nursing home and everything is aseptic and above board. If there be an accident and a coroner's inquest, what of it ? If the post-mortem shows that the girl's lungs were quite healthy, what of it ? The physician has only to

say he thought the girl was tuberculous, and that apparently he was mistaken! And yet even the nurses in the nursing home know the truth, and to their credit coroners are now asking questions about the fees which have been paid, because in these cases the fees paid are out of all proportion to the medical services rendered.

No experienced physician in London will deny the facts as stated here. The people for whom one has comparative sympathy are those who are caught and go to jail. There is the ignorant midwife who ruptures the uterus with a septic knitting needle. Her fee was only a few pounds. There is the down and out doctor who does abortion at so cheap a rate that he cannot afford "the second opinion" which would protect him from the criminal law. He has to face a double risk—alone—the risk of an inquest or the risk of being blackmailed later on by "a grateful patient." The bigger men run no risk, although their patients do, and there would be fewer requests for unnecessary abortion if women realised that *no form of abortion is free from risk to life.*

In 1911 I examined the contacts of 204 cases of pulmonary tuberculosis.¹ In all, 723 contacts were examined. Of the original patients some were infective, having tubercle bacilli in the sputum, and

¹ *British Medical Journal*, November 23rd, 1912

others were non-infective at the time, since no tubercle bacilli were found. The amount of infection in the contacts showed a remarkable relationship to exposure to infection. In the families of the infectious cases 60 per cent. were infected with tuberculosis. In the families of non-infectious patients the majority (75.5 per cent) were healthy. I also found that the greatest amount of infection was associated with the infective female.

This is not surprising. I know of one case where a mother and her entire family of nine children all died of tuberculosis within a period of ten years. What possible chance has the child who is reared by a mother with advanced disease? She coughs, and the air in her immediate vicinity is laden with droplets of secretion, containing tubercle bacilli. This air the child breathes. Millions of bacilli are deposited on the skin and clothing, and are carried to the child's mouth by its hands. When the mother kisses the child the germs are swallowed. She prepares the food and drink, handles it, coughs over it, and everything, including the table utensils, is infected. At every meal the child swallows infection. Such children are literally saturated with tubercle bacilli, and most of them die of tuberculous meningitis in infancy. If they do not die in infancy or childhood the disease may appear later on when

they are passing through one of the critical age periods of life—such as puberty or adolescence.

If the child of an infectious mother be removed from the mother at birth and reared under healthy surroundings there will be no infection. No child is born tuberculous. All are infected after birth. That is the principle of the Grancher system in Paris, where the children of tuberculous women are reared elsewhere by healthy foster mothers. The principle of that system has also been applied to tuberculous cattle. Over thirty years ago Professor Bang introduced it into Denmark. All the animals in a herd are tested with tuberculin. Those that react are segregated, and when a calf is born it is removed from its mother and reared by a healthy cow, or on pasteurised milk. In that way a herd may be freed of tuberculosis within a few years; and the system has also been adopted by many states in America.

All children should be tested with tuberculin, and those who react should be immunised against the disease by tuberculin. If this plan were adopted the eradication of tuberculosis could be accomplished within a generation.

It is clear from the foregoing that in certain circumstances the occurrence of pregnancy may be undesirable or even dangerous on medical grounds.

It has been suggested that a woman has a perfect right to take the risk if she pleases. As applied to active cases of tuberculosis I can understand that contention, provided the woman is prepared to part with her child from the moment of birth, but I cannot understand how any woman with foreknowledge has the right to have a child whose inevitable fate in this world will be to be infected with tuberculosis.

In what other ways could the race be improved? There are some who say—we breed horses, let us breed human beings. That remark is always certain to be applauded by the half-educated of all classes. By all means let us breed children as we breed animals, but before starting out on this adventure let us ask the great authorities on animal industry what their experience has taught. The earliest method devised for the improvement of live-stock was called mass selection—breed the best to the best. An excellent idea. Unfortunately we human beings do not know who are the best, and neither did the breeders of live-stock. According to Professor Robert Wallace the objection to this method of breeding “is that the visible characters of an animal often provide us with an incomplete or even misleading picture of the hereditary qualities represented in its germ-plasm,”

Ordinary pedigree breeding was the next method to be tried: "selection on the combined basis of the merit of the individual and the average merit of its ancestors." There is yet a third method of selection: "what is at once sounder in theory and more successful in practice than either of the other two. This is what the biologist calls *genotypic selection*, and briefly it consists in breeding, not from the best, nor from the best bred animals, but from the best breeders."¹ And when we think it over that is what poor old Humanity has been doing all the time.

¹ *Farm Live Stock of Great Britain*, 1923, p. 17

CHAPTER VI

USE AND ABUSE OF ALCOHOL

ALCOHOL, held in the mouth, gives a feeling of warmth which reflexly causes a flow of saliva, and, even before the alcohol is swallowed, a flow of gastric juice. When swallowed, alcohol dilates the blood-vessels of the stomach, whereby its movements and the flow of gastric juice are increased. The alcohol is then absorbed directly into the blood, and circulating in the blood again reaches the blood-vessels of the stomach, causing them to dilate, and increases the flow of digestive juices. This action is caused by small or moderate doses. Large amounts impede digestion. If this difference were recognised there would be fewer contradictory statements on the influence of alcohol on digestion. As an aid to digestion alcohol should be taken immediately before or during a meal.

A popular belief is that butter eaten before a meal delays the absorption of alcohol, and that this was a custom of the hard-drinking Russians of Czarist times. Butter does not hinder absorption,

and during the Great War Russian naval officers told me they had never heard of this custom. Bread and milk are the only foods that delay the absorption of alcohol.

Alcohol has no direct action on the heart, although stimulation of the membranes of the mouth and stomach may, by reflex action, cause the heart to beat more rapidly and forcibly. If a large quantity of undiluted spirit, say whisky, be swallowed, then the shock to the stomach is transmitted to the heart, and instant death follows. Every few years some foolish person dies in consequence of this bravado.

When moderate or large amounts of alcohol are absorbed into the blood, the blood-vessels of the body dilate. Thus the work of the heart is eased, since blood is more easily pumped through dilated than contracted blood-vessels. The heart beats faster and more forcibly, and, by reason of the faster flow of the blood-stream, all organs of the body are stimulated to increased work for a time. The capacity for muscular work is thus increased, but the result is transient, and once the stimulus has passed off all organs are left more exhausted than before.

The dilated blood-vessels of the skin increase the loss of heat from the body, so that its temperature

tends to fall. The loss of heat calls for increased oxidation of the food reserves stored in the body. This increase in oxidation calls for more oxygen, and so the rate of breathing is increased. The alcohol itself is oxidised, 1 oz. of brandy yielding 100 calories of energy, and in those accustomed to alcohol the alcohol alone is oxidised, and thereby the food reserves in the tissues are conserved. Alcohol is therefore a food, albeit the most expensive.

In certain cases of high fever alcohol is beneficial. The temperature and pulse rate fall, and the alcohol is oxidised. Moreover, it is the only food that enters the blood without digestion and unchanged.

When a large amount of alcohol enters the stomach it is rapidly absorbed into the blood until saturation point is reached. Then the absorption of more alcohol from the stomach is very slow and keeps pace with its oxidation in the blood and elimination by the kidneys. When all alcohol has been absorbed from the stomach, the amount in the blood is slowly eliminated. The period during which the percentage of alcohol in the blood remains constant is called the Plateau of Gréhan. Long before the Plateau is reached the victim is comatose, and but for the provision whereby the amount of alcohol in the blood cannot increase beyond a certain point—every drunkard would die. Some do die—

when the duration of the Plateau of Gréhant is so prolonged that the vital centres in the brain are overcome.

Ethyl alcohol, injected into the blood, has been suggested as an anæsthetic in surgery. Before the discovery of anæsthetics, a large drink of brandy was usually given before an operation to make the patient comatose. Both methods have the same disadvantages—the time taken to recover from the anæsthetic and the subsequent depression.

The most important action of alcohol is on the highest centres of the brain. Even a small amount induces sensations of well-being, comfort, content, and satisfaction with oneself and others. It is thus the greatest aid to hospitality. It also creates a feeling of greater mental power, and the time reaction for the simplest mental tests is at first accelerated. But experimental psychology has proved that the time reaction for a line of thought, involving association of ideas, is prolonged by even a small quantity of alcohol, and very soon the time reaction of the simplest tests is also prolonged. Thus the idea of increased mental power is a delusion, proving that the power of judgment has been weakened, if only to a slight extent.

The effect of a large amount of alcohol illustrates the action of two Laws. By the Law of Dissolution

the highest functions, those which were last acquired by the individual and by the race, are first abolished. In a descending scale other functions are progressively stimulated and then depressed, until at last the loss of function extends to the lowest and most primitive centres of the brain, those which in all animal life govern respiration and the action of the heart.

Power of judgment is first abolished, whilst imagination, emotions, and speech are stimulated. Then the power of imagination goes. Next to go is control over the emotions. Then the power of speech. Finely co-ordinated movements such as those involved in writing are next abolished. Then the power to walk. Reflex centres in the spinal cord governing natural functions are the next to be paralysed. The respiratory centre at the base of the brain is then affected, and breathing becomes laboured. Last of all, the cardiac centre fails to function, and the victim dies.

The second Law illustrated by large amounts of alcohol is that when a function is stimulated by small doses of a drug, it is usually paralysed by the same drug in large doses.

This depression of the respiratory and cardiac centres explains why injuries which would kill a sober man do not kill a drunken man. The vital

centres are so depressed that they are not inhibited by shock.

A very drunken person is speechless, helpless, and more or less insensible. If seated, his head falls forward, and his chin rests on the breast-bone. The breath has the odour of *stale* alcohol. There is either faint breathing or slow snoring, and the pulse is weak. The eyes are glazed, but sensitive to touch. When he is at rest the pupils are contracted, but if he is roused by slapping or pinching then both pupils dilate equally. The face is usually flushed and bloated, or may be pale, with blood-shot eyes. The skin is cold and clammy, and the temperature is below the normal of $98\cdot4^{\circ}$ F.

When a patient is insensible there may be difficulty in distinguishing between drunkenness and apoplexy (hæmorrhage on the brain), and mistakes are often made. The odour of *fresh* alcohol in the breath of an insensible patient is not conclusive evidence of drunkenness, because some well-meaning person may have forced spirits into the mouth after an apoplectic or other seizure. In an unconscious patient suspected drunkenness should always be regarded as a serious condition, and the "First-Aid" given should be as for apoplexy, pending the decision of a doctor, who should be called in at

Loosen all tight clothing about the neck and chest. Keep the patient lying on his side, with the head slightly raised on a pillow, so that his chin does not rest on the chest. If there be snoring draw the tongue forward. Apply to the head towels soaked in cold or iced water, and to the feet a *covered* hot-water bottle (to avoid burns). Cover the patient with blankets to ensure warmth, and allow him to rest undisturbed in a quiet room until examined by a doctor.

If the person is not insensible, if he is able to swallow, and if it is clearly a case of drunkenness, uncomplicated by a fall or accident, then, *and then only*, give an emetic. The simplest emetics are (a) two tablespoonfuls of salt in a pint of warm water, or (b) three teaspoonfuls of mustard in a pint of tepid water.

In cases of milder intoxication the best restorative is half a teaspoonful of salt in a cup of black, unsweetened coffee.

Progressive temperance in the use of alcohol is one of the great social changes in the history of the British people during the past three centuries. The historian, J. R. Green, writes of the seventeenth century in England, when "grave divines winked at the follies of 'honest fellows' who fought, gambled, swore, drank, and ended a day of debau-

chery by a night in the gutter." Of the eighteenth century in Scotland Dean Ramsay tells the story of a guest who was ahead of the times. "He had been involved in a regular drinking party. He was keeping as free from the usual excesses as he was able, and as he marked companions around him falling victims to the power of drink, he himself dropped off under the table among the slain, as a measure of precaution, and, lying there, his attention was called to a small pair of hands working at his throat. On asking what it was, a voice replied, 'Sir, I'm the lad that's to loose the neckcloths.' Here, then, was a family where, on drinking occasions, it was the appointed duty of one of the household to attend, and, when the guests were becoming helpless, to untie their cravats in fear of apoplexy or suffocation." In contrast to these times is the recent experience of "The Londoner" in the *Evening Standard*. One evening, in a suburban road, he saw an elderly reveller walking unsteadily and singing. Then a young man of about nineteen anxiously asked, "What's the matter with that man?" "He's had one too many," was the answer. The young man was mystified. This was the first time he had seen anyone the worse of drink.

Those who prefer statistics as an index to manners will find equal satisfaction in the figures. Between

1913 and 1928 the annual convictions for drunkenness in England and Wales fell from 172,130 to 55,642. The most fanatical prohibitionist cannot attribute these figures to greater tolerance on the part of the police, because in the period 1913 to 1928 the distillation of spirits declined by 42 per cent. and the brewing of beer by 55 per cent. The most obvious causes of this increased sobriety are a wider intellectual outlook amongst all classes, and an increasing interest in sport, motoring, cinemas, theatres, literature and food. The outstanding change in diet is the increased consumption of ice-cream, in which sugar supplies a bodily want which might otherwise be slaked with alcohol.

Some succumb to alcohol by reason of a state of mind too painful to be endured. If their ideas were reoriented either by introspection or by aid from others, they would find themselves free. Such cases are rare. Most require medical and others institutional treatment. The one treatment to be avoided by anxious relatives is the purchase of "secret cures" to be administered surreptitiously by "dropping a little in his tea." That treatment is wrong if for no other reason than that its discovery by a chronic alcoholic might precipitate a tragedy.

A physiological amount of alcohol may be consumed daily for a considerable time without harm-

ing the body. In youth and adolescence both sexes do best to abstain, but in middle life and in old age a moderate amount of good alcohol will improve digestion, add to bodily comfort and promote sleep. This moderate amount varies greatly according to age, sex, physique, mentality, conditions of life and of climate. The perspiring stoker at a blast furnace may consume beer in quantities injurious to a clerk, albeit the stoker if he exceeds will develop gastritis. Neat whisky may be taken on a cold Highland loch, but not with impunity under a blazing tropic sun, where the wise rule is—no alcohol until sundown. On the west coast of Africa I knew an officer who mounted on his mantelshelf a broken gin bottle with two straws rampant, beneath which ran the legend—"The bad West African Climate."

For a woman the physiological amount of alcohol is much less than for a man ; and there are men and women for whom the physiological amount is total abstinence—as witness the recorded case of a total abstainer, who, unaware that the patent medicine he was taking contained alcohol, developed chronic alcoholism. These differences in physique, temperament, and conditions of life make it impossible to define accurately a physiological amount which might be taken by all. No two individuals are alike,

**WEIGHT OF ETHYL ALCOHOL IN VARIOUS BEVERAGES
AND THEIR PHYSIOLOGICAL AMOUNTS**

Beverage	Average weight of alcohol per cent	Physiological amount per day
Cider, Perry	2	2½ pints
Porter	2 22	2¼ „
Stout	3 65	1½ „
Beer	3·75	1¼ „
Strong ale	5·87	¾ „
<i>Wines</i>		
Hocks, Moselle, Chablis .	8·6	11 oz.
Claret, Burgundy . . .	10	½ pint
Champagne	10	½ „
Tokay	10	½ „
Malaga	12	8 oz
Madeira	15·4	6 „
Marsala	16	6 „
Port	17	5¾ „
Sherry	17·5	5¼ „
<i>Spirits and Liqueurs</i>		
Chartreuse	32	3 oz
Benedictine	38	2½ „
Gin	33	3 „
Whisky		
Brandy from spirit . . .	42	2½ „
Curacao		
Brandy from wine, Cognac	47	2 „
Absinthe	51	2 „
Rum	60	1½ „

and when we speak of the "average or normal person" we are merely using a *façon de parler*, a figment of our imagination, and a fiction incapable of accurate definition.

Yet for every individual there is that physiological limit which St. Paul had in mind when he advised Timothy to take a little wine for his stomach's sake. And it is now generally accepted that, in the absence of contra-indications, 1 oz. of pure ethyl alcohol a day is the physiological limit. In the foregoing table is set out the weight of alcohol in various beverages, and of that beverage the amount which contains the physiological limit. But each of these beverages contains in addition to ethyl alcohol other substances, beneficial to some, and harmful to other individuals. Therefore the physiological amounts cannot be stated accurately in terms of alcohol alone. Apart from that reservation the table indicates the alcoholic strength of various beverages.

If a man sought his ounce of alcohol in a 1 per cent. cider he would drink five pints a day, and if the cider was sweet he would also be taking nearly 3 oz. of sugar—an exciting cause of rheumatism and gout. Sweet cider rapidly ferments and becomes rough or hard cider, the sugar being changed into alcohol. Rough cider also contains

malic acid, and is therefore prescribed in cases of gout. When rough cider ferments it becomes sour, the alcohol being changed into acetic acid, causing colic and diarrhœa.

Before tea and coffee came into use, beer was on the breakfast table and is still the staple drink of manual workers. With 5 per cent. of alcohol, English beer also contains sugars, lactic acid, and the extract of hops—lupolin, which has a soporific effect, inducing sleepiness. By reason of the sugars beer, and especially stout, is a food. In excess, beers increase the deposit of fat all over the body, and also cause "poor man's gout."

At the top of the scale is rum, with 60 per cent of alcohol from fermented molasses. It contains much sugar, and is coloured with burnt sugar. To many people rum, especially in hot milk, although pleasant to the palate from the flavour of ethyl butyrate, is a liverish beverage. In the Royal Navy it is issued as a ration, without ill-effects on the men. This may have been due to their hard, open-air life, because, since warships have become steel boxes in which the majority of the crew never see the sky except during recreation, fewer men are drawing their rum ration.

Anyone who drinks 2 oz. of absinthe a day is taking not only 1 oz. of alcohol, but the oils of

wormwood, anise, angelica, cloves, cinnamon, and peppermint. To these oils, in conjunction with alcohol, are due the effects of absinthe on the brain, which is stimulated by absinthe more than by any other form of alcohol ; so much so, that when the nerve cells governing voluntary movements are affected—epileptic convulsions occur.

Matured brandy distilled from wine (Cognac) and to a less degree matured whisky from malted grain contain, in addition to alcohol, many of the higher ethers which add to the flavour and aid digestion. But immature brandy from crude spirit and immature whisky contain, in addition to ethyl alcohol, the lower alcohols—amyl, butyl, and furfural, all of which are very toxic to the brain. To these lower alcohols is due the headache which is the aftermath of drinking immature spirits.

There is no sugar in brandy or whisky, so they have no food value apart from their alcohol. There is a little sugar in gin—the fermented product of unmalted grain, flavoured with oil of juniper, which stimulates the kidneys. Brandy, whisky or gin do not cause gout, but if taken neat or insufficiently diluted they cause gastritis, and in excess are profound poisons to the whole nervous system.

Cocktails are mostly based on gin, brandy or whisky, to which liqueurs, sweet cordials or bitters

are added. A cocktail before dinner is an aperitive. Taken otherwise they impair taste, appetite and digestion. The "cocktail party" is unphysiological.

Liqueurs are made of alcohol, to which sugar and a variety of aromatics have been added. Maraschino is flavoured with cherries; Kimmel with almonds; Curaçao with orange peel. The ingredients of Benedictine and Chartreuse are not known. Taken in excess all liqueurs are powerful gastric irritants.

Wines, prepared from the fermented juice of the grape, are either natural or fortified.

A.—NATURAL WINES

Grape juice contains sugar in the form of glucose, together with malic and tartaric acids. When the juice ferments the sugar is converted into alcohol, but when the alcohol reaches a strength of 14 per cent. fermentation ceases and no more sugar is converted. Therefore a natural wine cannot contain more than 14 per cent. of alcohol, and may contain as little as 5 per cent. There are five other qualities of natural wines :—

(1) *Dry or Sweet*

In dry natural wines all the sugar is converted into alcohol. In sweet natural wines some of the unchanged sugar remains in the wine.

(2) *Red or White*

Natural wine, whether sweet or dry, may be either red or white. White wine is made from white grapes or from the juice of purple grapes, without their skins, which contain the red colour. Red wine is made by fermenting the juice *and skins* of purple grapes.

(3) *Tannin Present or Absent*

There is no tannic acid in grape juice, this acid being confined to the skins and pips. Thus there is no tannic acid in white wines such as Hock, Moselle, Chablis, and dry Sauterne, whose acidity is due to the tartaric acid in the juice. In the red wines of Bordeaux, Burgundy, Hungary, Spain, and the Empire, tannic acid is present. The acidity of good wine, whether due to tartaric acid alone or combined with tannic acid, should not exceed 0.5 per cent., but for those of weak digestion a dry white wine is best.

(4) *Still or Sparkling*

In still wines there is no free carbonic acid, but in sparkling wines some of the carbonic acid gas given off during fermentation is retained in the wine. These sparkling wines—Champagne, sparkling

Hock, Moselle, and Burgundy—may be dry or sweet, red or white. The free carbonic acid stimulates movements of the stomach, but to many people a sweet sparkling wine is indigestible.

(5) *Bouquet, Aroma, Body*

The *bouquet* or scent of a wine is due to volatile ethers produced by the acids acting on the alcohol. These higher ethers also give the wine its *aroma* as it is passing the back of the throat. The *body*, or full taste of the wine, depends on the blending of sugars, acids, extractives, alcohol, and ethers.

B.—FORTIFIED WINES

When alcohol is added to natural wine, causing fermentation to cease and leaving much of the sugar unchanged, the wine is described as fortified. All fortified wines may delay digestion by reason of their sugar. They also predispose to rheumatism and gout. There are two varieties of fortified wines :—

(1) *Spirituuous Wines*

In spirituous wines, such as Port, Sherry, Madeira, and Marsala, there is a considerable amount of sugar, with over 15 per cent. of alcohol

(2) Liqueur Wines

The liqueur wines such as Tokay, Malaga, Constantia, and Tent, are very sweet and contain about 20 per cent. of sugar.

ADULTERATION

The cause of true temperance would be promoted by insisting on the purity of alcoholic beverages. In the foregoing list of beverages the following adulterants have been detected from time to time : arsenic, strychnine, lead, copper, zinc, alum, opium, quassia, chiretta, picro-toxin, picric acid, salicylic acid, sulphuric acid, salt, sulphate of potash, methyl alcohol, amyl alcohol, creosote and cayenne.

CHAPTER VII

HOW HEREDITY IS TRANSMITTED

HEREDITY was defined by Herbert Spencer as "The capacity of every plant and animal to produce other individuals of a like kind," and implies the transmission of physical and mental qualities from parents to offspring. If the child in appearance resembles one parent only, that parent is described as "absolutely prepotent," and the child is an example of the *exclusive inheritance* of that particular characteristic, namely, features. Sometimes qualities of both parents appear distinct and unblended in the child. Thus in most children the colour of both eyes is the same and is inherited from one parent only, but in rare instances the eyes differ in colour, one colour being inherited from the mother, the other from the father. That is called *particulate inheritance*, of which the best example is the piebald horse, where the different colours of the parents appear in unblended patches. A remarkable example of this has been recorded recently from Los Angeles.¹ A boy now aged three resembles his

¹ *London Evening Standard*, June 5th, 1935.

father and his mother in a curious fashion. "Seen from the left hand side he has a fair complexion, a blue eye and blonde hair. Seen from the right hand side he is dark with a brown eye and auburn hair.

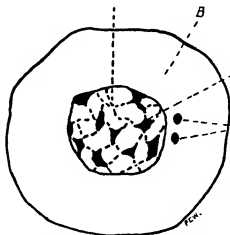


Fig. 2—A Nucleus B Cytoplasm C Particles
chromatin joined by network of lines D Centre

Photos of his hair show a clear division in the centre, dark one side, light the other." When a child shows a blend of certain qualities in the parents, such as the brown skin in the child of a black woman by a white man, that is called blended inheritance—but if in the blending the quality of one parent pre-

dominates over that of the other, the predominating parent is said to be "prepotent." It is believed that the characteristics of a race long civilised are prepotent over those of a race newly civilised. Amongst the older Royal Families of Europe the Hapsburg lip and the Bourbon nose have been prepotent for many generations. But it is also believed



FIG 3 —Coiled thread of chromatin and radiations from centrosomes.

that the qualities of a barbaric race are prepotent over those of a civilised race.

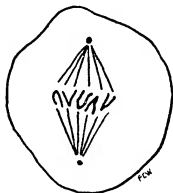
All living things are cells or masses of millions of cells, more or less differentiated. All life comes from a single cell, and in the case of most plants and all animals, including man, from a fertilised cell or ovum. Every cell (Fig. 2) consists of a jelly-like substance called protoplasm. In the centre of each cell is a

denser area called the nucleus. The surrounding protoplasm is called the cytoplasm. In the nucleus are particles of chromatin which can be stained by analine dyes. These particles of chromatin are joined together by a fine network of linin, which is



less easily stained. Around the nucleus is also an envelope of linin. In each cell near the nucleus are two minute bodies called centrosomes. When a cell is going to divide into two daughter cells, the particles of chromatin form themselves into a long, coiled-up thread (Fig. 3), which then breaks up into a number of lengths in the shape of V and U (Fig. 4). Meanwhile the two centrosomes have separated—one going to the north and the other to the south

pole of the cell. As they move to either end of the cell each chromosome throws out fine radiating fibres, some of which join to form a spindle. The envelope of the nucleus now disappears, and the chromosomes lie free in the equatorial zone of the cell, between the spindle of fine fibres extending



from north to south centrosome (Fig 5). Each chromosome becomes attached to a fibre of the spindle. Each chromosome divides, and one leg of the V or U is drawn to the north and the other to the south end of the cell. The cell (Fig. 6) now assumes the shape of an hour-glass, and then splits into two. Each new cell contains an equal part of every chromosome that appeared in the mother

cell. The chromosomes form a new nucleus in each cell, the centrosome divides into two, and the process (Fig. 7) of division is repeated as long as the organism is growing. The number of chromosomes which appear in a cell about to divide varies in different species of animals and plants, but is



constant in the same species. In man there are 32 chromosomes in a dividing cell, and each new cell contains one half of each of the 32 chromosomes.

In the genesis of a human being an ovum is penetrated by a male sperm cell, one of millions thrown off. The nucleus of the male cell fuses with that of the ovum. The centrosomes of the ovum degenerate, and the centrosomes of the sperm ini-

tiate the division of the ovum into 2, 4, 8, 16, 32, up to billions of cells which make up a new life. The fertilised ovum contains 32 chromosomes, of which 16 come from the sperm and 16 from the ovum itself. If the germinal elements, male and female, contained the same number of chromosomes as



all other cells of the body the number of chromosomes would be doubled when these elements united to produce a new individual. The mechanism whereby this duplication is prevented is marvellous. At an early stage in the development of the embryo certain cells are differentiated and, until the age of puberty, cease to multiply. These special cells are the generative cells destined to be cast off from the body as germinal elements—ova or sperm

—according to sex. When the generative cells divide to produce the mature germinal elements, they divide as do no other cells of the body. In the male the 32 chromosomes in a generative cell, from which two mature sperms will be produced, do not split into sixty-four parts. They separate so that each sperm contains only 16 chromosomes. In the female the process is more complicated. The immature ovum divides into two cells, each containing 16 chromosomes. These two new cells are not equal in size, one being many hundred times larger than the other. The smaller cell divides into two cells, both of which degenerate and become useless. The larger cell again divides into two cells, one large, the other small, each of which contains 16 chromosomes. The small cell degenerates. The large cell is the mature ovum ready for fertilisation. In the first division of the immature ovum the chromosomes were divided. In the second division of the immature ovum the chromosomes were split so that the mature ovum contains 16 chromosomes. If that ovum be fertilised the number is brought up to 32, by reason of the 16 chromosomes added by the sperm.

It has been suggested that invisible genes in the chromosomes are the actual particles through which

inherited characteristics of the race and individual are transmitted from parents to offspring. If each chromosome contained every inheritable characteristic of the individual this theory could be accepted. If each chromosome contains different inheritable qualities then the mathematical odds are against this means of transmission. Let us take the case of a species whose body cells contain 4 chromosomes, A, B, C, D. Each of the male sperms can only contain two of those chromosomes. The arrangement of chromosomes in the sperm cells must therefore be as follows :—

1 AB	2 CD
3 AC	4 BD
5 AD	6 BC

The same distribution of chromosomes must occur in the ova of the female. If any single sperm can fertilise any single ovum then the chance of the new individual inheriting all the chromosomes, A, B, C, D, of that species is 1 in 6. In the case of

man, where there are 32 chromosomes, the chance of all of them being represented in the child is only 1 in 601,080,390. Yet it may be that even in this realm of the infinitely small there is a process of natural selection—so that out of millions of sperms an ovum attracts the sperm containing the chromosomes which it lacks, and repels the others. One thing is clear. Whatever part of the generative elements contain the inheritable qualities, no man or woman can transmit to a child any inheritable characteristic which he or she did not inherit from his or her parents. In its biological inheritance the child is the product not of two parents, but of four grandparents. The parents were merely the trustees of the elements which produce the child. This also answers the old riddle: does the egg come from the hen, or the hen from the egg? From the egg comes not only the hen, but all the eggs that hen will ever lay.

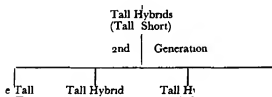
The greatest discovery of the hidden laws of inheritance was made by the Abbot Gregor Johann Mendel of Brunn in Austria. This discovery, the result of years of research, was published in 1865 in the Transactions of an obscure Natural History Society. Such is the simplicity of genius. In 1900 another scientist, browsing over the records of this old Society, suddenly recognised that a discovery

of the greatest value to humanity had been made—without being recognised. What the practical application of Mendel's discovery might mean to Great Britain has been told by Professor Wilson : "For every day by which the life of a variety of wheat is shortened between seed time and harvest, the wheat growing area in Canada reaches fifty or sixty miles further northwards. A vigorous, early ripening and highly productive oat, together with a turnip having the same characteristics might increase the returns from many a northern or high lying farm in Britain, and might even be the means of causing many a pasture field to revert once again to the plough, without the artificial and precarious stimulus of a protective duty."

To simplify Mendel's law I shall deal as he did in the first instance with the inheritance of only two characteristics—Tallness and Shortness. Mendel used ordinary garden peas, of which there are two varieties which breed true—Tall and Short. He cross-fertilised a tall with a short pea, and the result was a generation of Tall Hybrids, because tallness was the dominant factor. Outwardly these tall hybrids were indistinguishable from pure tall plants, but concealed in their generative cells were an equal number of elements of tallness and of shortness inherited from each parent. Thus of

25 short ova plus 25 short pollen — 25 pure short plants
 25 short ova plus 25 tall pollens } — 50 tall hybrids
 25 tall ova plus 25 short pollen }
 25 tall ova plus 25 tall pollen — 25 tall plants.
 100 ova plus 100 pollen — 100 plants

Pure Tall \times Pure Short



Will reproduce second generation
 $\frac{1}{2}$ Pure Tall, $\frac{1}{2}$ Pure Shorts,
 $\frac{1}{2}$ Tall Hybrids *ad infinitum*

every 100 particles of pollen in each plant, 50 contained the element of shortness and 50 of tallness. Of every 100 ova, 50 represented tallness and 50 shortness. This became apparent when a hybrid tall was allowed to fertilise itself—these plants being bi-sexual—or was crossed with another hybrid. Of every 100 plants produced by the tall hybrids, 25 were pure shorts and 25 pure tall—plants which would continue to reproduce shortness and tallness *ad infinitum*. The other 50 plants were tall hybrids, which if fertilised would continue to produce

25 per cent. of pure shorts, 25 per cent. of pure tall, and 50 per cent. of tall hybrids. The explanation is quite simple and depends on the law of chance.

There are an equal number of elements, male and female, representing tallness and shortness. It is therefore an even chance whether a "short" ovum will be fertilised by a "short" or by a "tall" pollen. In actual fact the chance works out as given on top of page 119.

Most people regard Chance as a fortuitous happening, whereas in reality Chance is governed by immutable mathematical laws. The only real difficulty in making a fortune by gambling is that we cannot foresee *when* a particular thing is going to happen, although we know that it must and will occur. To understand the working out of an even chance let the reader place 100 black and 100 white marbles in a bag, and shake them up. The black marbles represent tallness, the white marbles shortness. If the marbles be withdrawn haphazard in pairs there will be 25 pairs of black marbles, 25 pairs of white marbles, and 50 pairs of black and white marbles. Within slight limits there will be variations in the matching of the pairs, but if the experiment be repeated, say 100 times, the above will be the inevitable result. The 25 pairs of black marbles

can reproduce nothing but tallness, and the 25 pairs of white marbles nothing but shortness. The 50 pairs of black and white marbles will produce tall hybrids. The tall hybrids if self-fertilised will produce pure tall, pure short and tall hybrids

When an offspring inherits qualities from both parents, but only one quality is visible to the apparent exclusion of the other, the quality which appears is the "dominant" and the quality concealed is the "recessive." The tall hybrid is an "impure dominant." Outwardly it is a tall plant, but inwardly it contains the recessive element of shortness. If mental deficiency be recessive Mendel's law explains the existence of sporadic mental deficiency and why over 50 per cent. of feeble-minded children are the offspring of parents who are apparently in perfect mental and physical health. Outwardly these parents resemble the tall hybrids, and only when a feeble-minded child has been born to them is it possible to know one or the other was an "impure dominant."

All qualities are not transmitted by Mendelian inheritance, and because a character in a plant is thus transmitted, it does not follow that the same character in human beings follows this law. In plants colour is distributed by Mendel's law,

coloured flowers being dominant over white flowers, whereas in human beings colour is transmitted by blended inheritance. To discover what human qualities follow Mendel's law is one of the aims of positive Eugenics.

CHAPTER VIII

STERILISATION OF THE UNFIT

THE failure of contraceptives as a means of social amelioration has been followed by a demand for sterilisation. Despite the relaxation of the fourfold ban against instruction in the use of contraceptives there has been no appreciable reduction in the large families of the poor, who can least afford to rear children. For one reason or another, it may be lack of means, or intelligence, or an inborn dislike of anything against Nature, the complicated technique of female contraception is not popular amongst the poor. Despite the Birth Control Clinics, the advertisements in the Labour Press, and in London shop-window displays of contraceptives which would not be tolerated in any other city in Europe or America—despite all this united effort, those who can least afford to have children have the largest families.

The Eugenists have realised and admitted that the use of contraceptives is dysgenic, that is, against the welfare of the race, because contraceptives, in so far as they achieve their purpose, are being used

not by the poor, but by the more prosperous classes.

As things actually are, if it were not for the high birth-rate amongst the poor the race would dwindle year by year before our very eyes, because the birth-rate of the artisan, middle, professional, and wealthier classes, is not sufficient to maintain even a stationary population in Great Britain.

The more prosperous and intelligent classes are being taxed to maintain the children of the poor, and consequently cannot afford the large families they would like to have. One answer to that specious argument is that, as social conditions improve, birth-rates tend to fall without the aid of contraceptives. Yet to some Eugenists sterilisation of the poor is preferable to social reform.

Sterilisation means an operation which destroys the function of procreation without destroying the capacity for sex intercourse. In a man this is achieved by a slight operation—the cutting of two small tubes. In a woman the operation is more severe. Under a general anæsthetic either the abdomen is opened in order to cut the Fallopian tubes, or if the abdomen is not opened the wall of the womb must be seared with a cautery in order to seal the inner ends of the Fallopian tubes. Such in brief are the operations which some would inflict on the poor and other defenceless persons. Here

are the proposals of Major Leonard Darwin (ex-President of the Eugenics Society) :—

“It is proposed, in the first place, that a list should be kept of all persons who had been in receipt of public assistance continuously for a given period. . . . Under ‘public assistance’ should be included money or goods, whether supplied by the State or not, if given in the form of either systematic in- or out-door poor relief, free feeding at school, unemployment doles. . . . The list should contain a record of the number of children in each family ; and all parents on the lists who had had two or more children should be warned that no more should be allowed to appear, and of the consequences of a neglect of this warning. These consequences should be an immediate cessation of all public assistance, and also the maintenance of a special watch to see that the family was being reared under decent conditions in regard to accommodation, food, and education. When the warning was found to have been neglected, another child having made its appearance, and when also the family was found to be living an uncivilised life, all its members should be segregated in some suitable institution. . . . To mitigate the severity of this procedure, all couples should be released from detention, either if it seemed probable that they could re-establish

themselves in decent surroundings without public assistance or *if the man consented to be sterilised* (the italics are mine). . . . The above suggestions are certainly, to say the least, sufficiently drastic to cover all that could at first be advocated, even though it would leave wide fields still untouched."¹

Obviously it has never occurred to Major Leonard Darwin that to some extent poverty, mental deficiency, and even crime may result from the policies and mistakes of those super-men who manage the affairs of the State !

Other philanthropists would reserve sterilisation for mental defectives, on the assumption that their high birth-rate is a menace to the community. The State, for certain crimes, has the right to take Life in the interest of the community. For other crimes, such as sexual offences against children, mutilation would be a just penalty. If it be granted that the State has the right to kill, most assuredly it must have the right to mutilate. If the feeble-minded were a danger to the State, the State has a right to protect itself. There is no evidence that the feeble-minded are a danger to Society. Moreover, they have committed no crime. They are not responsible for their deficiency, and therefore they should be protected, not punished. Hitherto in all

¹ *The Need for Eugenic Reform*, pp. 385-386

civilised countries the feeble-minded have been cared for as persons who are unable to take care of themselves. There are some who think that these humanitarian ideas are endangering civilisation. The feeble-minded, in place of being cared for, should be sterilised, and left to roam about in a world in which they cannot possibly succeed. Apart from all ethical considerations the advocates of this policy have overlooked a grave social danger. If feeble-minded girls were sterilised and let loose in the community they would immediately become prolific carriers of venereal diseases. Yet the high illegitimacy birth-rate amongst feeble-minded girls cannot be ignored. When these girls are living under bad home conditions and without reasonable parental care and control, they should be segregated. The idealists reply—that means imprisonment for life. It means nothing of the kind, but it does mean that their liberty in the matter of sex relations has been curtailed in the interest of themselves and of the community. The half-witted girl is a very passive victim, and the best way to lower the high illegitimacy rate of female defectives is to amend the criminal law against the men who take advantage of these defectives. As the law stands, one answer to a charge of rape is consent, if the girl be over sixteen. Under sixteen that is no

defence. The mental age of all mental defectives is under sixteen. All that is needed is a short Act to amend the criminal code, so that the consent of a girl certified under the Mental Deficiency Acts is not accepted as a defence, if it could be proved that the man knew she was certified as a Mental Defective. That is surely a simple, non-contentious suggestion. Are the feeble-minded a heavy charge on the Taxpayer? Dr. Fox¹ of the Kent School Medical Service has investigated the after history of 182 people who, ten to fifteen years previously, had been certified as "feeble-minded." There were 100 feeble-minded men between the ages of twenty to twenty-five. Out of 100 normal men of the same age, fifteen to twenty, according to the Registrar-General's statistics, would have married—but only three of these feeble-minded men married, and there were no children of their marriages. Of the 82 feeble-minded girls only 10 had married, whereas had they been normal women of the same age an average of 25 marriages might have been expected. The 10 who married produced 10 children, whereas had they been normal 50 children might have been expected.

Of the 100 feeble-minded males 46 were employed

¹ G. W. Fox, M.B., "After Careers of the Feeble-Minded" *Medical Officer*, 1929

at an average wage of 33s. per week ; 42 were employed at an average wage of 16s. per week ; and 12 were unemployed. Of all normal males in the County of Kent 9 per cent. were unemployed, and therefore it is reasonable to conclude that only about 3 per cent. of the feeble-minded males were totally unemployable. Of the feeble-minded women 23 per cent. (including the married) were self-supporting ; 30 per cent. were partially employed ; and 47 per cent. were wholly unemployed. This compares badly with the record of the feeble-minded men, but of the unemployed women some were able to do domestic duties in their own homes. If that were taken into account the percentage of unemployed feeble-minded women would be reduced.

Among the women were seven unmarried mothers and eleven illegitimate children. That is a high illegitimacy rate, because only four or five illegitimate children might have been expected out of a like number of normal women in the same number of years. This high rate was due to bad home conditions, and to the obvious fact that it is easier for a man to take advantage of a feeble-minded girl than of a normal girl—and to escape the consequences. Of the illegitimate children nothing abnormal was noted. Altogether the total number of children, legitimate and illegitimate, produced

by these feeble-minded people was less than half the number produced by normal people of the same age. It may be said that the numbers investigated were small. That is true, but it is also true that an ounce of fact is worth a ton of theory. So far as the ascertained facts go there is no danger of the feeble-minded multiplying to such an extent as to endanger the average level of intelligence of the race.

Nevertheless, in order that these taints may not be transmitted, even for three or four generations, the marriage of the feeble-minded should be prevented. That appears to be a reasonable suggestion, but once, when I made it in the presence of an ascetic idealist, I was cursed with Bell, Book and Candle. Let us be fair to the idealist. He held that marriage was the right of every human being. That is true, but there is no right which cannot be alienated. Everyone has a right to live, but that right may be forfeited by reason of crime. Everyone has a right to own property, but if I and six others are on a raft at sea, and I possess the only bag of biscuits—I cease to have an exclusive right to the biscuits because each of my companions has a greater right, the right to live. Idealism may be carried to the verge of contradiction. What the idealist calls “holy marriage” does not consist merely in the act of procreation. It implies the

ability to rear and educate children, and those who cannot support themselves are presumably incapable of supporting children. In the Catholic Church, marriage is the only sacrament which the priests of that Church do *not* administer. The parties to the marriage administer the sacrament to each other, and take vows which far transcend the act of procreation.

The Report of the Departmental Committee on Sterilisation (1934), published by H.M. Stationery Office at two shillings, should be read by everyone who is interested in any way in mental defectives. It is impossible for anyone to dispute the truth of the information recorded in this Report. Moreover, unlike most Departmental Reports, this document embodies the results of an entirely new line of research. The facts recorded are so extraordinary that I hope no Wild Men of the Woods, on reading this book or perhaps the Report itself, will start a campaign for subsidised marriages of mental defectives. That written, I should add that the Report damns, and without Bell, Book or Candle, any measure of compulsory sterilisation. As a sop the Committee would legalise voluntary sterilisation. That recommendation need not worry anyone who is not a mental defective, and I don't think many mental defectives will be interested.

The London School Medical Officer in 1932

investigated the incidence of mental deficiency and insanity amongst the parents, brothers, and sisters of 19,034 children whom the school medical service had found to be mentally defective. This investigation showed that .

No other member of the family was defective in	1,598 cases
One brother or sister defective in	244 „
Two brothers or sisters defective in	60 „
Three brothers or sisters defective in	21 „
Four brothers or sisters defective in	8 „
Five brothers or sisters defective in	3 „

Only fourteen parents were found to be mentally deficient, and only forty parents, seventeen brothers or sisters, and nineteen collaterals had been insane. One child in nineteen of these families had gained a scholarship, and in two families two children had gained scholarships. It was also found that there is less mental deficiency amongst the relatives of high-grade mental defectives (those who are least abnormal).

The foregoing investigation shows that the mental defectives of one generation contribute very little towards the mental deficiency of the following generation, and it has been calculated that sterilisation on an extensive scale would have to be employed throughout at least three generations in order to

produce an ultimate decrease of 50 per cent. in mental deficiency.

Up to now those who have opposed the compulsory sterilisation of mental defectives have maintained that sterilisation would not greatly reduce the percentage of mental defectives in our midst. We argued that mental deficiency in many cases was a Mendelian "recessive," and that when two apparently healthy, normal people married, neither could know until the birth of a child whether one or the other was or was not an "impure dominant," the unconscious transmitter of bad qualities. We said that at least 50 per cent. of mental defectives were the offspring of parents who apparently were normal people. That was known. Yet none of us would have dared to speculate that over 50 per cent. of the children of a mental defective would be normal. Yet this last is now proved. The infant mortality amongst the children of mental defectives is abnormally high, as may well be imagined. From data supplied by the London County Council the intelligence of 669 children, whose father or mother had been certified as mentally defective, either under the Education Acts or under the Mental Deficiency Acts, was ascertained. The intelligence of the children was classified in four groups: Mentally Defective, Retarded, Normal, Superior

The children were divided into three age groups : under seven years, seven to thirteen years, and over thirteen, and the percentages in each age groups are as follows :—

Age	Mentally Defective	Retarded	Normal	Superior
0-6 .	3	23	73	1
7-13 .	14	31	52	3
Over 13 .	37	12	51	0

In children under seven years only 3 per cent. were found to be mentally defective. As the child grows up, mental defects are more easily detected, and the percentage of mental deficiency in children over thirteen rises to 37 per cent. Other points of interest are that mentally defective fathers and mothers transmit the defect to an equal degree.

Taking the available data for the whole of England and Wales, it appears that of 1,802 children of mental defectives, 16.9 per cent. were mentally defective, 23.4 per cent. were retarded, 58.4 per cent. were normal, and 1.1 per cent. were superior.

As regards compulsory sterilisation, the Committee asks "whether there is on scientific grounds an unassailable case for compulsory sterilisation," and answers : "If the test is to be the certainty with which the result of procreation can be pre-

dicted in individual cases, the case for compulsion cannot be established." Again : "Witnesses of great experience stressed the point that any association in the popular mind between mental deficiency institutions and compulsory sterilisation would make parents less willing to let their children be admitted, and would definitely add to the difficulties of ascertainment. This we feel to be a real danger. Any measure which results in 'driving defect underground' will gravely impede the administration of the Mental Deficiency Acts "

In discussing the objections to voluntary sterilisation the Committee appear to lose a strict sense of logic. Thus : "Two main objections have been put forward to a scheme for voluntary sterilisation. On the one hand, it is argued that if it is really voluntary, the necessary consent will not be obtained ; on the other hand, it is argued that defectives are so suggestible that they will be too readily persuaded and that their consent is really meaningless, since they are incapable of understanding to what they are asked to consent. In our opinion, whilst both objections contain an element of truth, neither is really valid. Many defectives are suggestible, a quality which is by no means confined to defectives, and they will accept the advice of those whom they have learnt to trust."

The Committee insists that sterilisation should be voluntary. Voluntary means by full consent of the will. Yet as they say mental defectives are "suggestible." According to the Oxford Dictionary "suggestible" means "open to hypnotic suggestion." Surely that is incompatible with full consent of the will?

Again: "In the case of an application by a minor the consent of the parent or guardian should always be required. If the patient has no parents or if they cannot be found and there is no legal guardian, the person who is in fact responsible for the patient's maintenance should be treated as his guardian for this purpose."

Is that compatible with full consent of the will? A normal minor under trustees is prohibited by law from signing away property, but a mentally defective minor may elect to be sterilised!

The Committee recommend that voluntary sterilisation be legalised in the case of:—

- (a) A person who is mentally defective or has suffered from mental disorder.
- (b) A person who suffers from, or is believed to be a carrier of, a grave physical disability which has been shown to be transmissible.
- (c) A person who is "believed to be likely" to transmit mental disorder or defect.

The Committee see no hope that sterilisation will reduce the cost of mental deficiency to the rate-payers: "Sterilisation will not in our opinion reduce to any appreciable extent the present wide disparity between the number of institutional beds available and the best estimate of the number needed. We would go further and say that until sufficient institutional accommodation is provided and ascertainment and community care are better organised, proper use cannot be made of sterilisation as a supplementary measure of care for the mentally defective and the protection of the community."

So far from reducing expenditure on mental deficiency, sterilisation would mean increased expenditure. As the report states, the only effective method of sterilising a woman is salpingectomy, involving "a period of several weeks in hospital and the discomfort and pain inseparable from any major operation." The medical experts who appeared before the Committee were agreed that only three to five persons of all mental defectives now in institutions would be suitable cases for sterilisation. There would be no saving in the rates.

The Report would allow voluntary sterilisation to anyone who wanted it in the interest of eugenics,

but the Committee have missed one point. A person might seek sterilisation for reasons that were ill-founded. Yet he or she would have taken an irrevocable step. This danger is not imaginary. Here is one of the saddest cases I have ever known.

A young man, who had been gassed in the war, was in receipt of a pension from the Ministry of Pensions. His disability was labelled pulmonary tuberculosis, but like hundreds of men so labelled he was not suffering from tuberculosis. His disability was fibrosis of the lungs, due to gassing. This was confirmed by a radiogram. When I told him there was no evidence of tubercle he was crest-fallen. I explained that this would not affect his pension, that he was entitled to a pension for fibrosis, and that he would enjoy his pension much longer than if the original diagnosis had been correct.

"This is terrible," he exclaimed, and then he told me. Engaged to be married, he had been reading eugenic literature, and did not wish to transmit tubercle to his children. He went to a surgeon, who, without any corroboration of the diagnosis, performed a vasectomy. It was only a slight operation, but one that could never be undone. Even if the man had had tubercle,

there was no reason why it should have been transmitted to his children.

There is no evidence that either mental disease or deficiency is increasing. In England and Wales on January 1st, 1933, there were 121,090 certified insane, and 1,539 people under the Mental Treatment Act. Owing to better hygiene in asylums the insane live longer, and so the insane population is increased without there being an increased incidence of insanity in the community. The joint Committee of the Boards of Education and Control estimated in 1929 that the total number of mental defectives in England and Wales was 300,000, or 8 per cent of the community. The Committee added that a virile population could contemplate this number with equanimity. By improved methods of detection and the growth of our School Medical Service, the number of known mental defectives is greater now than in the past, but does not of necessity mean an increase in the incidence of mental deficiency in the community.

Another objection to voluntary sterilisation has been well stated by Dr. Letitia Fairfield ¹ :—

“Because no machinery could conceivably be devised for preventing ‘voluntary’ sterilisation

¹ *The Case Against Sterilisation* Dr Letitia Fairfield, London, 1934 Catholic Truth Society

from being made *compulsory* on the poor and helpless. Two obvious methods of pressure at once suggest themselves :

“(a) Local Authorities could refuse the assistance of the social services to parents who declined to agree to sterilisation. There have already been many cases where Committees have suggested this operation to the blind, the tuberculous, or the unemployed, and it would be practically impossible to prevent them from putting on the screw if the operation were legally recognised.

“(b) Committees, officers, and magistrates could in practice make the discharge of patients from mental hospitals and institutions conditional on undergoing sterilisation, as is admittedly done in America and almost certainly in other countries. The Report expressly disapproves of this practice, but does not suggest how it could be effectively prevented. The Committees, etc., have wide discretionary powers in regard to discharge and could not be stopped from taking willingness to undergo an operation into consideration in making their decision.

“Because it is illogical to maintain that a mental defective, properly certified under the terms of the Mental Deficiency Act as requiring care, supervision, and control in his own interest or that of

others, could give a valid consent on such a grave issue. The Departmental Committee evidently consider that the destruction of procreative power is a simple and trivial issue, well within the competence of a mental defective to determine. The task put upon the doctor of certifying whether the defective really does understand the question is a much harder one than the Committee seems to think "

And again : " Because it is socially undesirable to encourage the marriage of sterilised persons. The view implied in most eugenic propagandist literature that it matters very little whether there are children of a marriage or not is as bad psychologically as it is theologically. It is not maintained that no marriage of this sort could be a success, but the encouragement given by legislation to such a practice would lower the whole conception of marriage in the community. As for the feeble minded, if they are capable of making a success of marriage, even under the simplest conditions, it is difficult to argue that they are unfit to procreate—or that anyone has the right to deprive them of their power of doing so."

Sterilisation is not a curative measure. Many mental defectives, sterilised or unsterilised, are best cared for in institutions. The helpless idiot is not less helpless if he be sterilised, the high-grade

defective with criminal instincts is not less criminal if sterilised, and the sex offender, sterilised or unsterilised, retains his impulses. In December, 1934, a male mental defective of twenty-three appeared before the Magistrates on a charge of having snatched a girl's bag containing 2*d*. It was stated that two years previously he had been sterilised.

CHAPTER IX

THE FALSE LAW OF MALTHUS

THE famous essay on "The Principle of Population," by the Rev. T. R. Malthus, a clergyman of the Church of England, was first published in 1798. In this essay Malthus assumed two things :—

- (a) "That population, when unchecked, goes on doubling itself every twenty-five years, or increases in a *geometrical* ratio."
- (b) That the food supply "could not possibly be made to increase faster than in an *arithmetical* ratio"

If those assumptions be true, then, as he said, "The human species *would* increase as the numbers 1, 2, 4, 8, 16, 32, 64, 128, 256, and the subsistence as 1, 2, 3, 4, 5, 6, 7, 8, 9. In two centuries the population *would* be to the means of subsistence as 256 to 9 : in three centuries 4,096 to 13, and in two thousand years the difference would be almost incalculable. In this supposition, no limits whatever are placed on the produce of the earth. It may increase for ever and be greater than any assignable

quantity ; yet still the power of population being in every period so much superior, the increase of the human species can only be kept down to the level of the means of subsistence by the constant operation of the strong law of necessity, acting as a check upon the greater power ”

It was obvious to Malthus that this vast increase of population over subsistence could never possibly occur, for the simple reason that people cannot live without food ; and *therefore*, from his primary assumptions (a) and (b), he drew the following deductions :—

1. That this “ constant tendency of all animated life to increase beyond the nourishment prepared for it ” is the cause of misery, vice and high death-rates.
2. That misery, vice, and high death-rates are the “ positive checks ” which prevent population from continuously increasing in a geometrical progression.

As a remedy for the unhappy state in which Providence had placed mankind, he proposed that the “ positive checks ” of vice, misery and premature death should be replaced by a “ preventive check ”—namely, that if people married at all, they should marry late in life, and limit the size of their family by the exercise of self-restraint, a remedy which

was not welcomed with enthusiasm. The remedy is forgotten, but the law itself, described by Lord Chief Justice Cockburn as "an irrefragable truth," is still accepted by many writers, economists and politicians. Disciples of Malthus have shown that the accuracy of his original statement, as to geometrical and arithmetical ratios, is not essential to his law. For example, it was interpreted by John Stuart Mill as meaning that population increased in a constant ratio and food in a diminishing ratio. Perhaps the clearest definition of modern Malthusian doctrine is that given by its most distinguished opponent, Henry George, "That population constantly tending to increase must, when unrestrained, ultimately press against the limits of subsistence, not as against a fixed, but as against an elastic barrier, which makes the procurement of subsistence progressively more and more difficult. And thus, wherever reproduction has had time to assert its power, and is unchecked by prudence, there must exist that degree of want which will keep population within the bounds of subsistence." ¹

This makes strange reading in the year 1935, when millions of people are on the borderline of starvation and yet tons of fish are thrown back into

¹ *Progress and Poverty*, 1884, p. 72

the sea, and tons of coffee and cereals are being burnt to raise the price of commodities. It's a mad world.

CONCERNING POPULATION

The first objection to the Law of Malthus is that population does not constantly tend to increase, either in a geometrical or in an arithmetical progression. On the contrary, it often remains stationary and sometimes declines.

INCREASING POPULATION

From the middle of the sixteenth to the end of the eighteenth century the population in the Northern States of America had been more than doubling itself every twenty-five years. The settlers were living under conditions of hardship; their adversary being Nature, from whom they had to win the untilled soil of a new country. They married young, their life was hard and simple, and the birth-rate was high. Moreover the death-rate was low, because as yet they were untainted by the diseases of civilisation. Nine years before Malthus published his essay, Dr. Rush of Philadelphia wrote: "Phthisis is scarcely known by those citizens of the United States who live in the first stage of civilised life, and who have lately obtained

the title of first settlers.”¹ Such were the circumstances under which a population increased in a geometrical ratio and doubled itself every twenty-

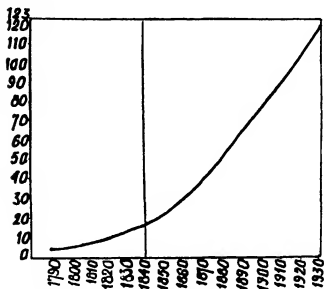


CHART 1—Showing actual volume of population in the United States between 1790 and 1930. To the uninitiated the chart suggests that the rate of increase was faster after 1850.

five years. Whatever may be the reason of that increase, it was not the reason asserted by Malthus—namely, an ample food supply. The food of the early settlers was sufficient, but not abundant.

¹ *Medical Enquiries and Observations*, Philadelphia, 1789, p. 159.

Indeed the available food per head in the United States to-day, with a population of over 122 millions, is greater than it was in 1798, when the population was just over five millions. And yet

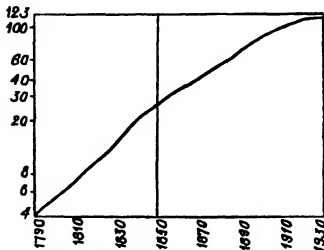


CHART 2 —Chart showing *rate* of increase of population in the United States between 1790 and 1930. It will be noted that the actual *rate* of increase was faster prior to 1850.

population is not now doubling itself every twenty-five years.

The actual increase of population in the United States between 1790 and 1920 is plotted out on an *arithmetical* chart (Chart 1). Such a chart gives an accurate and graphic representation of the actual

volume of population, but to the uninitiated it suggests that since 1850 the population has increased at a faster *rate* than before. Now an increase of two millions to a population of ten millions is an increase of 20 per cent., and is less in proportion than an increase of one million to a population of two millions, which would be an increase of 50 per cent.

When the population of the United States is tabulated (Chart 2) on a chart which shows the actual ratio of increase as between one year and another, it is at once apparent not only that the fastest rate of increase was prior to 1850, but also that the *rate* of increase is slowing down. It is obvious that populations may increase, but one of the things which Malthusians overlook is the fact that many populations have remained stationary over long periods of time. Moreover, because a population is known to be increasing, that is not a valid reason for the supposition that it will go on increasing. As Henry George has remarked, it would have been equally logical for Adam to have supposed that his first child, because it weighed 7 lbs. at birth and 15 lbs. at eight months, would at the age of ten be as heavy as an ox, at twenty be as heavy as an elephant, and at thirty weigh over 100,000 million tons.

STATIONARY POPULATIONS

Cogent evidence has been cited by Thorold Rogers¹ to prove that during the fourteenth, fifteenth and sixteenth centuries the population of England and Wales was almost stationary, and amounted to between two and a quarter and two and a half millions. It would also appear that in closed countries, especially if they be islands, population may remain stationary. In more recent times this fact is illustrated by the history of Japan.

In 1723 the population was 26,065,422

In 1846 the population was 26,907,625

Between these dates the population for over a hundred years was almost stationary. In 1867 the Shogunate was abolished, the Emperor was restored, and Japan began to be a civilised Power.

This change was followed by an increase of population. The rise in the birth-rate,² first recorded in 1881, has continued, and in 1934 the population of Japan and her dependencies was 84,000,000.

If we believe that population has a constant tendency to increase and that a restriction of births is the remedy, how can we explain the fact that for 123 years the population of Japan remained stationary?

¹ *Industrial and Commercial History of England*, London, 1909, p. 46

² *Statistique Générale*, Paris, 1924

Are we to believe that the Japanese, whilst in a semi-barbaric state, practised birth control, and that they refused, as soon as Western civilisation and a knowledge of contraceptives had reached them, to continue this practice? If it be so, then they acted not only unlike most semi-barbaric peoples, but also unlike most civilised peoples.

As long as Japan was a closed country, supporting itself on its own produce, the population remained stationary. There was no overcrowding. Then she became a civilised, industrial Power, the mass of her people became poorer, the birth-rate rose, and the population increased. That is the genesis of the present political situation in the Far East.

DECLINING POPULATION

Population may increase, remain stationary, or decline

At the beginning of the eighteenth century Montesquieu¹ asserted that the total population of the earth had declined since the Christian era, and Henry George comments on the strange fact that no one has ever advanced the theory of there being a fixed quantity to human life in the world. Now in contrast to the Malthusian nightmare it

¹ Quoted by Henry George, *Progress and Poverty*, London, 1884,

is most reasonable to believe that, once our first parents had increased and multiplied, and filled the earth and subdued it, and ruled over the fishes in the sea, and the fowls of the air, and all living creatures that move upon the earth—that once these things had come to pass, population has passed over the world in waves, of which the ridge is never too high nor the trough too low. When time is measured in æons, the decay of Islam, the break-up of the Roman Empire, the decline of Greece, and the fall of Babylon, are events of yester-year. The world is very old, and “behind dim empires, vaguer ghosts of empire loom.” Buried beneath the Grecian ruins in Crete are the ruins of a pre-Grecian civilisation, *circa* 2000 B C., whose language is unknown, but whose women were dressed as are this evening the women of London and New York. “Also their love and their hatred and their envy is now perished.” In the Western Hemisphere the story is the same.

“America also has increased in population during the time we know of it : but this increase is not so great as is popularly supposed, some estimates giving to Peru alone at the time of the discovery a greater population than now exists on the whole continent of South America. And all the indications are that previous to the discovery the

population of America had been declining. What great nations have run their course, what empires have arisen and fallen in 'that new world which is the old,' we can only imagine. But fragments of massive ruins yet attest a grander pre-Incan civilisation; amid the tropical forests of Yucatan and Central America are the remains of great cities forgotten ere the Spanish Conquest: Mexico, as Cortez found it, showed the superimposition of barbarism upon a higher social development, while through a great part of what is now the United States are scattered mounds which prove a once relatively dense population, and here and there, as in the Lake Superior copper mines, are traces of higher arts than were known to the Indians with whom the whites came in contact."¹

Nor is it necessary to unroll the records of past ages. At this very hour we are witnessing the decline of a great European nation—France. Between 1914 and 1918 the deaths among the civil population outnumbered the births by 1,272,000, and that figure is the more appalling because it does *not* include the 1,354,000 deaths caused by the Great War. In 1920 there was a partial recovery, when the births exceeded the deaths by 160,000, but in 1921 this increment had dropped to 117,000,

¹ Henry George, *Progress and Poverty*, London, 1884, p. 82.

and in 1922 to 71,000. At the present time in many of her provinces the deaths exceed the births, and people are simply disappearing.

Assuming for the moment that the means of subsistence do tend to increase at a slower rate than population—the law of Malthus, although it might explain why populations did not increase faster or why population remained stationary, could not possibly explain why a population declines. That, I think, is an irrefragable truth, because it is not possible to believe that the depopulation of America was caused by a universal failure of the means of subsistence throughout the American continent, and that the soil of a country that now contains over 122 million people once became so impoverished that it could only support nomadic tribes

If the estimated total population of the world be charted on an arithmetical graph it is apparent that, so far from showing any signs of a tendency to increase in geometrical progression, the total volume of population, during the comparatively short time in which measurements have been made, is increasing in the arithmetical progression of a straight line. Yet the Malthusians have an answer: "If population is always trying to increase faster than food, it is evident that the excess is always dying off, and that the actual

increase of population really represents the increase of food." An excellent example of the old game—Heads, I win ; tails, you lose. Fortunately it is also possible to demonstrate the falsity of the second assumption on which the doctrine of Malthus is based.

CONCERNING FOOD SUPPLY

The second false assumption is that the food supply "could not possibly be made to increase faster than in an arithmetical ratio." This is false because in the first place the animal and vegetable kingdoms tend to increase a hundred and a thousand-fold faster than the human species, a fact obvious to anyone who owns or rents a garden, even a back garden, or who possesses a flower pot. Therefore, even if there be a constant tendency in *some* forms of life "to increase beyond the nourishment prepared for it," this tendency cannot possibly apply to man, because the means of his subsistence—fish, birds, animals, and grain—not only tend but actually do increase at a much faster rate than his own species. And so it has been since the end of the first chapter of Genesis. But the pagan mind, both ancient and modern, is much given to the contemplation of horror, and we find neo-Malthusians picturing the loathsome consequences of an *unlimited* increase amongst the lower forms of life.

Thus it has been calculated that if the egg of every oyster hatched there would be within ten years a mass of oyster shells whose bulk would equal that of the earth. Another has calculated that if the egg of every house fly were hatched the whole surface of the globe in the same time would be covered by a mass of flies to the height of three miles. But even in their choice of bogies Malthusians are unfortunate. The first bogy, if it proves anything at all, proves that there is never likely to be a scarcity of food in the form of oysters. Moreover both bogies illustrate very well a point of even greater importance. The increase both of oysters and of flies is limited, not because their food supply is limited, but because they are preyed upon by other creatures whose food supply they become, and also because their multiplication is checked by climatic changes. In general the main check on an unlimited increase in the vegetable and animal kingdoms is not from below, owing to a deficiency of food, but from above. Now there is no living thing in the world greater than man. He is also his own worst enemy and his increase is also limited, not from below, but from above. And without going outside this world for the purpose of my argument, it will later be shown that his increase is naturally limited by environment.

Even if we regard man merely as an animal—an animal who began by losing his tail, and who is now in some danger of losing his wits—there is a vast difference between man and every other animal in the world in his relation to the food supply. Both the fox and the man eat chickens, but the more chickens a fox eats the less will be his food supply, whereas the more chickens a man eats the more will he cause to be reared. The animal has no control over its subsistence, but the food supply of man is under dominion. Even the consequences of a bad harvest can be avoided by the building of granaries. Human food is produced by the work of human hands, and the more hands there are the more food will there be. And the work of a hundred men, by economies in labour, will produce more than a hundred times the work of one man. Against the unlimited application of this principle Malthusians cite the “law of diminishing returns.” It is true that if the labour applied to a given piece of land be increased beyond a certain number of men, the production *per head* will begin to diminish, but on the other hand scientific discoveries are constantly setting this law at nought. For example, if twenty men on a given piece of land were too many for the maximum production per head by the ordinary methods of agriculture, the intro-

duction of intensive agriculture would make them too few.

By his own efforts man can increase the food supply, for he can regulate those forces of Nature whereby the vegetable and animal kingdoms tend to increase. And he has done it. From a few grains of a new variety of wheat discovered a few years ago, millions of bushels are now grown. The only limits of possible subsistence are the confines of the earth, and those limits could never be reached until the whole earth was producing food. As a wild improbability it is possible to imagine that the earth might be cultivated up to a point beyond which no further cultivation was possible, but so far as we know this event has never happened in the past, nor have we any reason to suppose that it is going to happen in the future. The end of the world is a philosophic certitude, but it is also a philosophic certitude that the nutriment of the earth can never be exhausted by man, for the simple reason that he brings nothing into the earth and takes nothing away. During his sojourn on earth he transmutes matter and force without destroying a molecule of the one or a unit of the other.

But according to the Malthusians there is one very drastic limit to the food supply which we who write of the possibilities of agriculture have entirely

missed—namely, the supply of artificial fertilisers which depend on nitrates. And they say, “the available nitrogen will increase by solar action, agricultural and electrical action, but only at a slow rate ; and the world population will only be able to increase slowly with it.” It is all very sad and miserable, but in the gloom are two rays of hope. The peasant proprietor still maintains that natural manure is better than chemical manure. And in January, 1925, every jobber on the London Stock Exchange was marking down the price of Chilian nitrates, in which British investors are heavily interested, because synthetic nitrogen had become a serious competitor owing both to its cheaper price and to the erection of enormous plants for its production in various countries.

CHAPTER X

POPULATION AND FOOD SUPPLIES

THE false doctrine of Malthus is refuted not only by analogy and by logic, but also by the recorded facts concerning the relative increase of population and of food supplies. Since 1851 the population of the British Empire, including the United Kingdom, has increased as follows ¹ .—

1851	157,733,497
1861	181,148,316
1871	224,249,613
1881	247,736,248
1891	345,408,922
1901	385,706,721
1911	417,348,615
1921	449,349,000
1931	493,370,000

But the increase of wheat, barley, oats, and maize produced within the Empire between 1891 and 1932, the first and last years for which complete figures ²

are available, has been, in thousands of quarters of 320 lbs. :—

Year	Wheat	Barley	Oats	Maize	Totals
1891 .	49,850	12,950	34,375	2,725	99,900
1901 .	51,325	12,000	38,388	4,600	106,313
1911 .	90,288	14,700	67,038	7,225	179,251
1918 ¹	101,500	32,500	80,000	11,000	225,000
1932 ¹	129,200	28,406	60,900	20,300	238,800

This means that since 1891 the percentage increase in cereals has been nearly three times greater than the increase of population. In 1932 the wheat surplus over Empire requirements in thousands of quarters was 23,100, but there was a deficiency in barley, oats and maize of 1,300, 1,000, and 13,600 thousand quarters respectively. These facts alone are conclusive proof that the very basis of Malthusian doctrine is false, and indeed the only neo-Malthusian reply consists of two questions :—

“ Does man live by wheaten bread alone ? ” and, “ Have the imports from other countries such as the United States and Russia maintained their exports to us ? ” ² Not a very effective reply. The obvious answer to the second question is that

¹ *Whitaker's Almanack*, 1922, 1932

² *The New Generation*, London, December, 1922, p. 7.

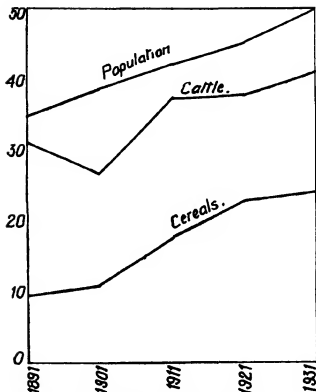


CHART 3 —Showing actual increase of population, cattle, and cereals within the British Empire

as the British Empire becomes more self-supporting its imports of food from other countries must naturally diminish. For the white races wheat is

the staff of life, but no one ever suggested that man lives on wheat alone. He requires many other things, including meat and fat. The increase of cattle, sheep, and pigs, expressed in thousands of heads, within the British Empire, has been :—

Year	Cattle	Sheep	Pigs	Totals
1891 ¹ .	97,942	199,245	7,441	305,628
1901 ¹ .	114,809	144,927	7,054	266,790
1911 ¹ .	150,926	211,332	10,534	372,792
1921 ² .	172,092	191,582	10,703	374,377
1931 .	156,487	243,387	4,350	404,224

That is to say, the percentage increase of cattle within the British Empire between 1891 and 1921 was nearly *four times greater* than the percentage increase of population. During the last decade the increase of live-stock has almost equalled the increase of population (Chart 3). The remarkable decrease in pigs is no fault of the animal, known in Ireland as "the gentleman who pays the rent," but is a natural consequence of our middlemen's love of Denmark. "Buy British or Danish" was the slogan placarded on our hoardings by pro-

¹ W. Page, *Commerce and Industry* Tables of Statistics, London, 1919.

² Taken from the *Statesman's Year Book*, 1921 and 1922, and from *Statistique Générale de Géographie*, Paris, 1924.

Danish Britons, and doubtless some simple folk are under the impression that Denmark is a British possession.

If population were pressing against the means of subsistence, then when the means of subsistence were greatly increased, as between 1901 and 1911, there should have been a corresponding increase of population. This did not happen. Although the food supply was enormously increased, the population of the British Empire continued the even tenor of its way. These facts prove that there is no constant tendency in human life "to increase beyond the nourishment prepared for it."

On the contrary the available food supply is determined, first, by the tendency of the animal and vegetable kingdoms to increase at a faster rate than the human species, and, second, by the actual number of workers engaged in the production of food. If only a small proportion of the population be engaged in agricultural industry, the production of food will be less than it would be if a larger proportion were working on the land. And these, after all, are very reasonable conclusions.

THE FALSE DEDUCTIONS

From two false assumptions—namely, that population constantly tends to increase in a geometrical

ratio, and that food supply increases in an arithmetical ratio—Malthus made two deductions which are also false.

1. He asserted that this "constant tendency of all animated life to increase beyond the nourishment prepared for it" is the cause of misery, vice, and high death-rates. We now find there is no constant tendency in human life to increase beyond the nourishment prepared for it, and therefore this cannot be the cause of misery, vice, and high death-rates, because a thing which does not exist cannot possibly be the cause of anything at all
- 2 The second false deduction was that misery, vice, and high death-rates are the "positive checks" which prevent population from continuously increasing in a geometrical progression. Now it is possible from false assumptions to reach a correct conclusion, not by logic, but by luck. In the case of Malthus it is easy to prove that his conclusions were false, apart from the fact that the assumptions on which they were based are also false. Although misery and vice are the cause of high death-rates, they are *not* checks on population.

Under conditions of misery there is a high death-rate, but there is also a high birth-rate. Now an increase of population depends on the survival

rate, and in point of fact there is a greater increase of population among the poorer than amongst the richer classes. To quote the National Birth-Rate Commission, "the greater incidence of infant mortality upon the less prosperous classes does not reduce their effective fertility to the level of the wealthier classes." These facts are obvious, even to neo-Malthusians, who, when driven into this last ditch, declare that this increase of population amongst the poor is due to our "humanitarianism" which is "always fostering the reproduction and the survival of the unfit." Their argument is biologically and historically unsound.

Pharaoh was an orthodox Malthusian, who said to the Egyptians, "Behold, the people of the children of Israel are numerous and stronger than we. Come, let us wisely oppress them, lest they multiply; and if any war shall rise against us, join with our enemies, and having overcome us, depart out of the land. Therefore he set over them masters of the works, to afflict them with burdens; and they built for Pharaoh cities of tabernacles, Phithom and Rameses. *But the more they oppressed them, the more they were multiplied, and increased.* And the Egyptians hated the children of Israel, and afflicted them and mocked them. And they made their life bitter with hard works in clay, and brick, and with all

manner of service, wherewith they were over-charged in the works of the earth.”¹

Nor is there any evidence that Pharaoh was afflicted by “humanitarianism.” On the contrary his idea of an Infant Welfare Clinic was to instruct the midwives, Sephora and Phua, to kill all the male children. Throughout the ages it has been the same, and even at times when there was little charity for the poor, when their birth- and death-rates were higher than they are to-day, and when their children slaved in the factories of England and America, even then social misery failed to prevent an increase of population. On the contrary it would appear that high birth-rates are Nature’s method of making good the leakage of human life from high death-rates. Indeed Malthus himself was very near the truth when he wrote: “There is perhaps no proposition more incontrovertible than this, that in two countries . . . the one in which the pressure of poverty is the greatest, will have the greatest proportion of births, deaths and marriages.”

Moreover an increase of population does not of necessity lead to a rise in the death-rate. It is well known that the death-rate tends to increase with density of population, but, as Mr. G. Udny

¹ Exodus, Chap 1

Yule has pointed out,¹ in recent times in civilised States that tendency has been completely outweighed by the progress of medicine, so that the death-rate has fallen rapidly in spite of great increases of population. Consequently in civilised countries even this tendency of the death-rate to increase with density of population has not been an effective check against an increase of population. During the past fifty years there has been an almost universal fall of the death-rate in Western Europe, accompanied by an equally striking increase of population

Neither is vice a check on population, since the eugenists are constantly drawing attention to the fecundity of the criminal classes. Indeed it would appear that as a check literature is more effective than vice, since few great writers have left descendants in the fourth generation. "Perhaps," says Thorold Rogers, "in time to come a law will be discovered on this phenomenon, and the fact that a poet has left a long line of descendants will be more fatal to his reputation than any assaults of any number of critics."

At the world Population Conference the Malthusian doctrine was re-stated by Professor H. P. Fairchild, of New York, as follows :—

¹ Presidential address to the Royal Statistical Society, London, November 18th, 1924

“In an old society, where an equilibrium has been struck between population and the standard of living on the basis of an unchanging combination of land and stage of the arts, the only way that population can increase is at the expense of the standard of living, and *the only way the standard of living can be improved is by reducing the population.*”

That statement is an ingenious, and, at first glance, an almost obvious proposition. And yet it carries many assumptions. In the first place we are asked to assume an old society in a static or stationary condition. There is to be no further development in those arts, crafts and inventions whereby man creates wealth out of the earth. Now, there are many old societies which remain in this stationary condition, but they are old societies of savages. All civilised societies, old and new, are in a constant state of flux and change. For a state of flux and change is the most obvious sign of civilisation, as it is of life itself. Then we have the standard of living—by which is meant the degree of comfort or the material possessions of each family—pictured not as something created by human toil, but as something having an independent existence of its own.

As we reduce population, the standard of living improves. Now, according to Professor Fairchild, the standard of living is “the average level of com

fort—including all material goods from the barest necessities to the most elaborate luxuries." If that be so, would it not be a good thing to go on reducing population until the average level of comfort was one of elaborate luxury? Let us try a *reductio ad absurdum*.

ADAM AND EVE

One morning in a small hotel in London a newly married couple awoke, and spent some considerable time in ringing the bell. They could hear the bell ringing, but no one answered. On leaving their room to investigate they made the appalling discovery that all the other people in the hotel—proprietors, servants and guests—were dead in their beds. Then the man did a most sensible thing—he telephoned for the police. There was no reply from the Exchange. The two rushed into the street to summon aid, and found a milkman lying dead on the pavement. They ran to the main thoroughfare, and there found numbers of people dead on the pavements and in the streets. Motor vehicles were all stopped in collision with each other or with the buildings on either side. The only living things were a few horses aimlessly pulling along wagons and carts whose drivers were dead.

"I shall go mad," cried the woman.

"No," said the man, "you will not. There is a natural explanation for everything. Some poisonous gas must have fallen on London, and we have escaped. The animals also escaped. That is all. Let us go to the General Post Office and telephone to the Provinces. This is a big affair." He really meant that it was a little matter in comparison to his love for her.

Being sensible people they took possession of a horse van without a driver and drove to the post office. They passed thousands of dead in the streets, and now found numerous dead officials sitting at their desks. In the telephone room, discovered after an hour's search, they rang up Birmingham, Manchester and Liverpool. There was no reply. The disaster was more serious than they had anticipated. In the room of the Foreign Telephones they rang up Paris. There was no answer. Berlin—no answer. New York—no answer. And the man cried out: "My God! We are alone upon the earth. We own the world. It is all ours. All its wealth. Billions and trillions. But what shall we do?"

There would be no instalments to pay on the little house at Chorley. No more instalments on the furniture. They might even afford to have a child. Then the Terror of the Thing overcame him,

and he told it to the woman. "We are very, very poor. All wealth in the world has lost its value. Of what use to us is a railroad? We can't use it. We can't sail an ocean liner. All the fresh food in the country will be rotten within a week. The tinned stuff may keep for two years. We must leave London at once. The air will be pestilential within three days. We shall have to grow food for ourselves."

And they loaded their van with clothing, boots, and provisions taken out of a store, so that they might have supplies until such time as they could grow food and weave cloth for themselves. And out of a shop in Bond Street the woman took a diamond necklace valued on the previous day at 20,000 guineas.

"What's the use of taking a thing like that?" said the man, and she answered. "My dear, it's very pretty."

And so the new Adam and Eve passed out of London and over the roads of England, until they came to a farm beside a river, and near to the sea. Here they stopped. Their first task was to bury the people who had lived in the farmhouse, and at the end of two days their hands were raw and blistered. Their life was work from dawn till dusk. There was always something to be done. For in

the Beginning it was written : " In the sweat of thy brow thou shalt eat bread." And yet they talked of children. Would not the coming of children increase the work and reduce what little comfort they had for themselves? But children would be companions and could help to keep back the weeds. All around the farm weeds, bushes and trees were taking root over fields, roads and railways. Wild Vegetative Nature was the power which limited their means of subsistence, their standard of living, and their level of comfort. The man and that silent force were at war as to which should possess the earth and the fruits thereof. And he came to fear the weeds even more than the howling of the Alsatian wolves in the winter. The man and the woman never returned to London. They had no wish to do so. A few months after they came to the farm they had noticed in the south-western sky great birds, larger than any they had ever seen before, slowly descending into what once was London. The scavengers of the earth had arrived.

The man and the woman begat children, and they, like the children of Adam, inter-married amongst themselves. At the end of twenty-five years there were twenty-five people on the farm. This population increased in geometrical progres-

sion, doubling itself every twenty-five years, and thus at the end of 200 years there was an agricultural community of 3,200 people. It was then that the Elders granted permission to the head teacher to lead an expedition of twenty men to the British Museum. The main facts concerning the lost civilisation were to be copied out on sheepskin parchments and preserved. Tradition had it that if a man walked ten miles west into the forest he would find a large embankment along which, in the old days, a machine driven by steam had rushed at a great speed. If this embankment was followed south, it would lead one to a place called Euston. Near that place would be a large building, crowned by a dome, and in that building were books containing all the knowledge of the old world.

After four days of adventurous travelling the expedition arrived, thrusting their way through dense thickets of undergrowth, growing breast high around the Museum. In the Reading Room the great dome had fallen, and the floor was covered with mounds of fallen masonry, on which shrubs had taken root. Animals had been there ; as the party entered startled birds flew with shrill cries from the amphitheatre of book-shelves where they were nesting. It was spring time.

On the ground level they found a door intact.

This they forced, and entered a smaller room which was well preserved because the windows were unbroken. In the centre was a long table on which lay portions of faded yellow paper.

"In this room," said the head teacher, "they probably exposed for reading their most recent journals and magazines. And here we shall begin our work."

He went to the table and gently turned over some of the faded leaves.

"Ah ! It is as I surmised from my observations in the farm library. No print of later date than the seventeenth century has survived the test of time. The total knowledge of two centuries has been obliterated, unless—and this, my brothers, is where scholarship comes in—we can decipher the marks of type. For example, on this page the ink has vanished, but here and there the type pressed hard into the paper. On this page I can make out fifteen words. Here they are : ' the—only—way—the—standard—of—living — can — be — improved — is — by — reducing—the—population.' "

They all laughed, but the head teacher continued :—

"This is no laughing matter, my brothers. According to our tradition, certain journals of the lost civilisation were devoted entirely to humour, and possibly I am now holding in my

hand what was once the leading humorous journal of the twentieth century. And," the old man continued with a grave smile, "it is also possible that what I have just read to you was their Last Joke."

CHAPTER XI

NEO-MALTHUSIAN CLAIMS

THE neo-Malthusian movement is based on the assumption that population constantly tends to increase faster than the food supply, and that consequently an unrestricted natural birth-rate is the cause of starvation, poverty, disease, premature death, and war. As a remedy Malthus advised celibacy, marriage late in life, and limitation of families by the exercise of self-restraint. Neo-Malthusians accept the law of Malthus, but in place of his remedy—which they denounce “as being impracticable and productive of the greatest possible evils to health and morality”¹—they recommend contraceptives. They advocate “nearly universal early marriage, together with a selective limitation of offspring to those children to whom the parents can give a satisfactory heredity and environment so that they may become desirable members of the community.”² They also maintain “that a

¹ The President of the New Generation League, *The Declining Birth-rate*, London, 1917, p. 88.

² *Ibid.*, p. 89

universal knowledge of hygienic contraceptive devices among adult men and women would in all probability automatically lead to such a selection through enlightened self-interest, and thus to the elimination of destitution and all the more serious social evils, and to the elevation of the race"¹ These doctrines are held by the New Generation League, founded in 1877, which in one sense is a parent society because it has affiliated societies in America, Germany, Holland, Belgium, and Sweden.

The reason why artificial birth control is advocated by these societies is a belief that the law of Malthus is true, and indeed they seek to bolster up this so-called law by a further series of sociological, economic, and statistical fallacies. As proved in a previous chapter the law of Malthus is false, and if we are now able to expose these more recent fallacies, then, so far as neo-Malthusians are concerned, the very basis of their propaganda will be destroyed. Because it is axiomatic that if an unrestricted natural birth-rate is *not* the cause of starvation, poverty, disease, premature death, and war, contraceptives, whatever else they may do, cannot possibly be a remedy for those evils.

To clear the way for discussion, certain terms must

¹ The President of the New Generation League, *The Declining Birth-rate*, London, 1917, p 89

be defined. For example, over-population is not a mere matter of numbers. A barren rock in the ocean is over-populated by one starving man, whereas the United States is not of necessity over-populated by 122 million people. Nor has Malthus, nor the neo-Malthusians, nor anyone else, ever seriously contended that any country in the world is now over-populated in the sense that it could not support all its present inhabitants provided its natural resources were fully developed. In the Malthusian and neo-Malthusian sense, "Over-population exists whenever the number of children born into a family, community, or state is in excess of the increase in the food supply *coming* to that family, community, or state at the same time. This is the true Malthusian meaning of over-population, and in this sense every important country in the world, except New Zealand and Australia, is, and practically always has been, over-populated." ¹

From the neo-Malthusian point of view that is a thoroughly bad definition. The number of children born, although not in excess of the increase in food actually produced, might nevertheless be in excess of "the food supply *coming* to that family, community, or state at the same time"—owing to

C V Drysdale, *The Malthusian Doctrine and its Modern Aspects*, London, 1917, p 26

the greed of a profiteer, to a corner in food, or to a blockade, in which cases the cause of the shortage is not over-population, but bad government or war. For that reason their definition fails. Moreover as neo-Malthusians accept the law of Malthus there is no reason why they should not accept a definition of over-population based on Malthus, namely—that over-population exists in any country where population is increasing at a faster rate than the unrestricted food supply, whereby population is literally pressing on the soil, and large numbers are overcrowded and underfed, for the simple reason that there is not enough food to go round. Improved methods of production might relieve the pressure for a time, but very soon population would again be pressing against the means of subsistence. The miserable inhabitants of such a country would be faced by two alternatives—either to endure the high death-rates of want and starvation that kept population down to the level of the food supply, or to restrict the birth-rate. That is sound Malthusian doctrine. It is also a sound economic and comprehensive definition of over-population. For our neo-Malthusians this definition has one disadvantage, namely, that this state of affairs has never yet existed in any country in the world, and is unlikely to arise in the future, because even

industrial countries are now able to draw their food supply from the greater part of the inhabited globe.

It is also necessary to define the terms "starvation" and "poverty." Starvation means that people are short of the necessities of life; whereas poverty means that they lack a reasonable share of the comforts of life. Whatever else may be the cause of poverty, it is not over-population in the Malthusian sense. Starvation again means famine, and neo-Malthusians are foolish to cite famine as proof of over-population, because, whatever may be the causes of famine, no famine ever yet was caused by pressure of population on the soil. Indeed where intensive cultivation is practised famine is least likely to occur, because if one crop fails another will probably succeed. Moreover, famines have occurred in countries where population is scarce, as in Eastern Russia, or is dense, as in Bengal. Famine is no proof of over-population, although it may be a terrible proof of bad government or under-development.

When Malthusians cite the Irish famines as proof of over-population, the falsity of their argument is revealed. In 1727 the population of Ireland was about two millions, the birth-rate about 50 per thousand, and the people were in abject misery. It was then that Swift, master of satire, proposed,

as a remedy for the over-population of Ireland, that the English people should cultivate a taste for roasted Irish babies, and thus bring delicacies to England and prosperity to Ireland. In 1838, when the population of Ireland was about eight millions, McCulloch¹ stated that the poverty of the Irish people was due to density of population, and that the population was more than double that which the country "with its existing means of production" could support in comfort. A blacker economic lie was never told. It was neither the imprudence nor the high birth-rate of the Irish people that made them choose the potato as their staple food, but the certain knowledge that if they produced anything else, it would be taken from them to pay the rack-rents of absentee landlords, themselves in the hands of London Jews. Even during her famine, Ireland was a food-exporting country, and "the existing means of production" were capable of supporting a larger population than the country then contained. "Even during the famine, grain and meat and butter and cheese were carted for exportation along roads lined with the starving, and past trenches into which the dead were piled."² There is one other thing to be said. These wrongs live in the

¹ Quoted by Henry George, *Progress and Poverty*, p. 95

² Henry George, *Progress and Poverty*, p. 94

memory of the Irish people, and English neo-Malthusians are merely prolonging the bitterness between two nations who might be friends when, in place of admitting a wrong, they seek to twist what was at best a most damnable mistake into an argument for contraceptives.

Neo-Malthusians claim that if the birth-rate be artificially reduced there will be a reduction in the death-rate, because, according to the law of Malthus, "the ordinary amount of reproduction causes pressure (on the means of subsistence), which pressure is evidenced by death, which prevents the pressure getting above a possible limit."¹ They also assert that "a high birth-rate implies a high death-rate, a low birth-rate a low death-rate; and a rise or fall of the former should produce an approximately equal rise or fall of the latter. This may be called the law of correspondence of birth-and death-rates."² I am tempted to refer to this so-called "law of correspondence" in words which Paley applied to another argument: "It's a lie, and that's the end of it"; but, as the fallacy is not self-evident, it is better to smash up the very basis of the neo-Malthusian movement by irrefutable evidence. Now it can be proved not only that there

¹ C V Drysdale, *The Declining Birth-rate*, p 110.

² C V Drysdale, *The Malthusian Doctrine*, London, 1917, p 35

is absolutely no correspondence as alleged between birth-rates and death-rates, but also that a declining birth-rate *must of necessity* lead to a rising death-rate.

In the first place the meaning of certain terms may be recalled. The number of births per annum per 1,000 of population is the *crude* birth-rate, whereas the *corrected* birth-rate allows for variations in the proportion and ages of married women in the population. The death-rate is the number of deaths per 1,000 of population, and the infant mortality rate is the number of deaths of infants under one year old per 1,000 living births in the same year.

Neo-Malthusians claim that a low birth-rate is the cause of a low infant mortality rate, but in support of that claim there is not a particle of evidence. During the last quarter of the last century in England the birth-rate was *falling* when infant mortality was *rising*.

The following Table ¹ shows the birth, death, and infant mortality rates during 1931 in six of the largest cities in Great Britain, and in fourteen of the largest cities in the United States. This Table also shows the percentage increase or decrease in

¹ Adapted from *Statistical Bulletin, Metropolitan Life Insurance Co*, New York, May, 1932, p 3.

1931

City	Births per 1,000	Per cent inc (+) or dec (-) on 1930	Deaths per 1,000	Per cent. inc (+) or dec (-) on 1930	Deaths under 1 year per 1,000 live births	Per cent inc (+) or dec. (-) on 1930
Great Britain						
Birmingham	17 1	-3 9	11 4	+5 6	70	+12 9
Glasgow .	21 1	+5 0	14 2	+6 8	104	+3 0
Liverpool .	21 6	-0 5	14 0	+10 2	93	+14 8
London .	15 0	-4 5	12 4	+8 8	65	+10 2
Manchester .	16 0	-7 0	13 4	+4 7	83	+6 4
Sheffield .	15 0	-0 7	11 0	+3 8	70	+6 1
United States						
Baltimore	18 0	-3 2	14 2	+2 2	72	+10 8
Boston .	18 0	-22 1	13 8	-2 1	70	+1 4
Buffalo .	18 5	-8 0	12 4	-3 9	66	-1 5
Chicago	15 3	-10 5	10 4	0	56	+3 7
Cleveland .	17 8	-10 1	11 0	0	53	-3 6
Detroit	17 3	-16 8	8 2	-11 8	57	-12 3
Los Angeles	13 3	-7 0	10 8	-3 6	58	-4 9
Milwaukee .	18 3	-8 5	9 0	-6 3	56	-3 5
New York .	16 3	-7 4	10 9	+0 9	57	0
Philadelphia	17 0	-7 1	11 9	-4 8	59	0
Pittsburgh .	20 9	-6 3	14 0	+0 7	72	+4 3
St. Louis .	17 3	-1 7	14 6	+5 0	60	+11 1
San Francisco	11 8	-4 1	13 0	0	42	+5 0
Washington, D C. .	19 0	-1 0	15 8	+3 9	71	0

these rates as compared with the figures for 1930. From this Table it is apparent that there is not the slightest correlation between the birth-rate and the

infant mortality rate. In all but one (Glasgow) of these twenty cities the birth-rate fell. In eleven cities the infant mortality rate rose, in three cities it was stationary, and in six cities it was lower. In all probability the rise in infant mortality was due to the economic depression.

Since 1899 there has been a great decline of infant mortality in England and Wales. This decline has had nothing whatever to do with the falling birth-rate. The reduction of infant mortality is for the most part due to the diminishing frequency of death from "enteritis and diarrhoeal diseases," for which the rate has fallen from 40 in 1899 to 13.9 in 1933 per 1,000 population. Whereby hangs a most interesting story. Infantile enteritis was found to be caused by a germ, the bacillus of Morgan. This discovery was followed by another—namely, that in houses where children are suffering from enteritis, the bacillus of Morgan is also found in the stomach of the house-fly. The fly is therefore the agent whereby the disease is spread, infection being carried from the sick child to the food of other children. It had long been noted that infantile enteritis was more prevalent during dry than during wet summers, and the explanation is now apparent. The house-fly lays its eggs in rubbish and in manure-heaps near houses. During

wet seasons many eggs are destroyed, and thus there are fewer flies to carry infection. When the house-fly was proved to be a carrier of disease, the late Lord Northcliffe started the "Swat that Fly" campaign in the *Daily Mail*, and so it would be more rational to attribute the decline of infant mortality to the *Daily Mail* than to the declining birth-rate. But the chief cause of reduced infant mortality was petrol. The horse was replaced by motor transport, and departed from the mews of our great cities. The manure-heaps disappeared, and therefore there are fewer flies to carry infection. Neo-Malthusian speculations are thus very far removed from scientific and economic facts.

If we go back a hundred years it is also apparent that medical science has conquered many other diseases of infants—notably that terrible disease, tetanus of the newborn, the Seven Days Sickness, now practically unknown. It is obvious that medical science has made considerable progress, but when the President of the New Generation League was asked at the Birth-rate Commission why he should conclude that the falling birth-rate had everything to do with the falling death-rate to the exclusion of all the trouble that has been taken to promote the health of the people, he answered. "So rigidly do I conclude it that I do not believe

sanitation or medicine, or any of these great advances, have as yet, though they will in the future, saved a life at all." ¹ If they strain at a gnat, neo-Malthusians are certainly prepared to swallow many camels.

Nor is there any statistical evidence to warrant the assertion that a high birth-rate is the cause of high infant mortality. The late Dr. J. Brownlee, Director of Statistics to the Medical Research Council, carried out an exhaustive statistical investigation on the relationship between infantile mortality and fertility.² He points out that for this investigation it is necessary to select data which are not open to the suspicion that restriction of birth is being practised. "If present-day statistics were chosen, as there must be more restriction of births among the better classes, where the infantile mortality is low, a correlation between high fertility and high infantile mortality would at once be obtained. *To use such figures is to work with loaded dice.*" The italics are mine. To avoid that difficulty, Dr. Brownlee went back to the statistics of 1871, when the birth-rate of England was at its maximum and the figures may be said to be free from the objection just noted. His investigation, which must

be accepted by anyone who has even an elementary knowledge of modern statistical methods, proved that the connection between fertility and infantile mortality is at least very small, since the partial correlation coefficients were all in the neighbourhood of *zero*. Again my italics. "This result is, I think, important. It strikes straight at one of the arguments for limitation of a family—namely, that it is better, say, to have three or four healthy children than five or six unhealthy. Conditions being equal, the size of the family has nothing to do with the infantile death-rate." Dr. Brownlee's results deserve the widest publicity, if only as an antidote to the fallacies disseminated throughout the Press by the advocates of artificial birth control. His conclusions are as follows :—

1. When the data are taken before restriction of birth became a practical factor, there is no evidence that large families were more unhealthy than small ones, and the statement that it is better to have three healthy children than six unhealthy ones has no apparent foundation.

2. That in place of marriage taking place at a higher age, it has, probably due to the war, taken place at a lower age than in 1911, so that the population is in a more favourable condition for the production of children now than then.

Neo-Malthusians are so fond of figures that, to vary an old line, "they lisp in numbers and the numbers come," but as they often quote "coefficients of correlation" in a fashion likely to mislead the unwary, it is advisable to explain the meaning of this term. A coefficient of correlation is a number which indicates the extent to which two things move together. When the coefficient is zero, or 0, it indicates that there is no correspondence between the movements of the two things, but a coefficient of unity, or 1, means that the movements of the two things are similar in all respects. But even when the movements of two things are similar in all respects, and their coefficient is unity, this does not prove that there is any causal relation between them. For example, it is quite possible that the movement of the death-rate from pneumonia in England over the past fifty years might give a coefficient of unity with the sale of feather-beds in Moscow during the same period of time. The two curves might show similar movements, but there would be absolutely no causal relation between them. A coefficient of correlation does *not* prove cause and result. If it shows that two things move together, then, by totally different methods, the study of causation may be undertaken. On the other hand, if, as indicated by a negative coefficient, the two

things do not move together, it would be a waste of energy to consider whether one caused the movement of the other.

Dr. C. V Drysdale has claimed that "the degree of correspondence between the birth- and death-rates in England and Wales in the ten years just before the war was between 86 and 94 per cent, and most probably 90 per cent."¹ On the other hand, Dr. Major Greenwood² has pointed out that there is a correlation of 0.84 between the birth- and the death-rate of England and Wales from 1838 to 1912 (which approximates to the figure given by Dr. Drysdale). But Dr Major Greenwood has also shown that the correlation between 1838 and 1876, when the birth-rate was fluctuating, is *minus* 0.12, whereas after the year 1876 the correlation became *plus* 0.92. This proves firstly that the whole of the positive correlation found by Dr Drysdale was due to the *falling death-rate*, and secondly that there is no constant correspondence between birth-rates and death-rates. Moreover Dr. Greenwood has also pointed out the fallacy in Dr. Drysdale's discovery of a positive correlation of 0.84 between the infant mortality and the birth-rate in fifty-five counties of England and Wales. Dr. Drysdale had based

¹ *The Malthusian Doctrine in its Modern Aspects*, 1917, p. 47.

² *The Declining Birth-rate*, 1916, p. 130

his calculations on the *crude* birth-rate, whereas Sir Arthur Newsholme, who took the *corrected* birth-rate, obtained a correlation of 0.36 for the English counties ¹

Apart from the study of correlation, there are many plain facts to disprove the neo-Malthusian assertion that birth-rates and death-rates rise and fall together. Thus between 1910 and 1911 the birth-rate of Ontario *rose* from 21.1 to 24.7; but the death-rate *fell* from 14 to 12.6.

A remarkable neo-Malthusian fallacy is the belief that if the birth-rate is lowered everyone will live longer, and that consequently there will be no reduction of population. This belief is asserted in the following question to and answer by Dr. C. V. Drysdale at the National Birth-rate Commission :— ²

Q. Does that mean that the lower the birth-rate, the longer we shall live?

A. Certainly. Yes, most decidedly. That is our reason for advocating a lower birth-rate.

In that answer are no less than three fallacies. First, as already proved, the death-rate is not determined by the birth-rate. Secondly, there is a limit beyond which the death-rate cannot be

¹ Cf. *The Declining Birth-rate*, 1916, p. 105

² Cf. *The Declining Birth-rate*, 1916, p. 103

lowered, since sooner or later each one of us must die ; but there is no corresponding limit to a falling birth-rate. In the third place, a *falling* birth-rate may in itself be the cause of a *rising* death-rate, for a very simple reason which has been pointed out by the Registrar-General. In consequence of a low birth-rate the *proportion* of people living at the more advanced age periods of life is increased, and of necessity at these age periods the death-rate from natural causes is high

A falling death-rate causes not only an increase in the numbers of those living, but also an increase in the *proportion* of those living at advanced ages, when mortality is naturally high. Thus the proportion of old people in the population has been gradually increased by the falling death-rate, and the proportion of young people has been diminished by the falling birth-rate. In any population so constituted, the death-rate tends to rise. On page 62 of the General Report on the Census of England and Wales, 1911, the Registrar-General states : " It may be pointed out that, although the effect of the fall in the birth-rate has hitherto been in a sense advantageous in that it has increased the proportions living at the working ages, a tendency to the reversal of this fact has already set in, and may be expected to develop as time goes on."

The truth is that our falling birth-rate, over-crowded cities, and empty colonies, threaten an Imperial disaster, not to be averted by immigration alone. The birth-rate must also be increased. Statisticians have proved that the race cannot survive unless the average number of children is over four per family. The number of children in Great Britain is below that figure, and any increase of population is due to the improvement of public health, which saves more lives than are lost by lack of births. In other words our longevity has masked the dangers of a falling birth-rate. As there is a limit to a fall in the death-rate, it is obvious that when this limit has been reached the population will decline, and, according to the Census Report of 1931, that calamity is now upon us.

The late Dr John Brownlee¹ forecast in 1924 that a maximum population might be reached in the course of fifteen or twenty years. Consequently he wrote :—

“ That in place of this being the time for preaching control of birth, the opposite is the case. The time for preaching birth control has passed. Whether due to birth control or not—and I think the much larger part of the fall is due to race physiology—

¹ *The Lancet*, November 1st, 1924

the birth-rate has reached the level required, and any further fall will seriously endanger the national life." He was right. Our maximum population is due in 1936.

Although no clear correlation exists between birth-rates and death-rates, Knud Stouman,¹ working on the French statistics, has shown that there is a most interesting positive correlation between birth- and death-rates between the ages of twenty and thirty-nine, but that this positive correlation disappears towards both extremes of life. He also points out that one great disease—tuberculosis—shows the same age curve as the correlation coefficients of births and deaths ; and that both the birth-rate and the tuberculosis death-rate are influenced by *one common factor*—poverty. In other words, the poorer people are, the higher is their birth-rate, their death-rate, and the incidence of tuberculosis amongst them. When neo-Malthusians and contraceptiveists seek to support their propaganda by stating that infant mortality increases with the number of children in the family, they are ignoring two facts : first, that infant mortality is mostly determined by poverty ; and secondly, that a high birth-rate is not the *cause* of poverty. On the contrary, poverty would appear to be the dominating

¹ *International Journal of Public Health*, Vol II, No 4, p 423

factor which influences the birth-rate. If birth controllers were really interested in the poor, they would concentrate on the primary causes of poverty, in place of trying to conceal, by artificial means, only one of the consequences of poverty.

CHAPTER XII

THE LAW OF FERTILITY

THE true law of population was discovered by Thomas Doubleday in 1837. Doubleday's law was based on a series of experiments in which he found that an *overdose* of manure invariably led to *sterility* in plants, and he attributed the rising birth-rate of his own time to the fall in the standard of living throughout England, where famine conditions existed during the first twenty years of the nineteenth century. According to the Law of Doubleday, whenever the existence of a species is endangered a corresponding effort is invariably made by Nature for its preservation by an increase of fertility, especially when the danger arises from a diminution of proper nourishment or food, "so that consequently the state of depletion or the deplethoric state is favourable to fertility, and that, on the other hand, the plethoric state, or state of repletion, is unfavourable to fertility in the ratio of the intensity of each state."

It should be noted that the terms "fecundity"

and "fertility" are not synonymous. By fecundity is meant the capacity to bear offspring, in contrast to sterility or the incapacity to bear offspring. By fertility is meant the degree of fecundity. High fertility means a large, low fertility a small number of offspring.

Throughout Nature there are enormous differences in fertility. The conger eel is said to produce fifteen million eggs a year, in contrast to the fulmar petrel, which lays one egg a year. Yet the fulmar petrel is very successful and abundant in the mid-Pacific, and, says Professor J. Arthur Thomson,¹ "we are thus led to the Darwinian conclusion that the rate of reproduction has been regulated in the course of many generations *in relation to the chances of death.*" The italics are mine, because neo-Malthusians contend that the chances of death depend on the birth-rate, although it is surely obvious that if the conger eel reduced his birth-rate his chance of death would not be reduced. In fact as a species he would disappear. It is also advisable to distinguish between potential fertility and actual fertility. In theory a woman between the ages of fifteen and forty-five *might* bear thirty children, but in point of fact this does not happen. Nature has her own check on the birth-rate, and the cir-

¹ *Standard Cyclopædia of Modern Agriculture*, London, 1909, p. 186

cumstances under which that check operates were discovered by Doubleday.

There are two defects in Doubleday's statement of the law of fertility. He selects food as the sole factor which influences fertility, but all breeders are agreed that you must feed animals well to promote fertility, so long as you do not let them run to fat. He also makes an over-statement in claiming that fertility varies in exact proportion to scarcity or to abundance, because obviously death must put an end to the fertility of a starved animal. On the other hand, there is a great difference between starvation and poverty, and there is also a difference between good food and luxurious living. For those reasons I preferred to re-state the Law of Doubleday in simpler terms.

*That under conditions of hardship the birth-rate tends to rise, and that in circumstances of ease the birth-rate tends to fall.*¹

The evidence in support of this Law is derived from animal industry, social conditions, and vital statistics.

EVIDENCE FROM ANIMAL INDUSTRY

In regard to the fecundity of stallions, Cornevin states that an abundant supply of green food has a very beneficial effect, but notes that a mere increase

¹ *Birth Control*, London, 1922, p. 69

in the quantity of food may be of little moment, because instead of improving fertility it may produce fat and nothing more. The quality of the food counts for something, and there may be too much of a good thing. "Every year we have before us at the shows specimens of the finest breeds of sheep and pigs, which, though ideals of good build, assimilative power, and fattening capacity, are sterile."¹

Mr. G. F. Finlay, Ph.D., B.V Sc., found that as a preventive and as a cure for temporary sterility in pigs induced by over-fatness, pasture is unrivalled. The laxative and bulky diet, together with exercise, removes the superfluous fat and brings about a more healthy tone of the reproductive organs. He attaches importance to sufficient exercise if breeding pigs are to retain sufficient vigour and health to breed regularly, and lack of exercise is regarded as one of the chief causes of sterility.²

In cows temporary sterility may arise from heavy feeding and lack of exercise. "It is a well known fact that some cows, when stall-fed during the winter, may not conceive, but will do so when turned out to grass later in the year."³ According to the

¹ Quoted in *Standard Cyclopædia of Modern Agriculture*, London, 1909, p. 186

² "Sterility in Pigs" Quoted in the *Farmer and Stockbreeder*, February 18th, 1924, p 378

Farmers' Cyclopædia of Agriculture,¹ breeding animals should be neither fat nor poor, but should be kept in good, vigorous condition.

Professor Robert Wallace² states that barrenness may be induced by :

1. Overfeeding in the case of either sex, thus loading the reproductive organs with fat ;
- and
2. By too low condition, especially if associated with exposure to cold or wet.

There is also remarkable evidence from the animal kingdom that under conditions of hardship the birth-rate tends to rise. If you buy a working mare from a farmer he may say . " That mare is in foal," but if you buy a blood mare from Tattersall's, they may say " believed to be in foal." For it is a well-known fact that the hard-working horse, living under conditions of comparative poverty, is more fertile than the racehorse, whose life is one of comparative luxury.

Again in the salmon rivers of Scotland a most extraordinary event has been noted by the Board of Fisheries. If there be a year during which many fish die on account of disease, spates, or the depredations of birds, then during the following season

the salmon coming up the river are found to be almost bursting with ova. Here again, in some mysterious way, the rate of reproduction is related to the chances of death.

Another example of the law of Doubleday was recently brought to my notice by a farmer who owns a farm in Aberdeenshire, and another in Cornwall. A strain of potatoes, very fertile in the hard climate of the north, when sown in Cornwall began to lose their fertility after a couple of seasons in the milder climate. As he also noted, the original fertility was restored when the strain was taken back to the north.

Aesop tells the fable of the old woman who gave her hen a handful of grain a day, and it laid one egg daily. "Ah!" thought she, "if I give it two handfuls of grain it will lay two eggs a day" Alas! It laid none.

EVIDENCE FROM SOCIAL CONDITIONS

There is also ample evidence to prove that under conditions of hardship the human birth-rate tends to rise. Between 1800 and 1820 social conditions in England were deplorable. The price of wheat ranged from £4 to £6 per quarter, and in many parts of the country famine prevailed. Nevertheless, during the first ten years of that period the population of Britain increased by 14 per cent. and during

the second ten years by 17 per cent.¹ On the other hand, as social conditions improve, the birth-rate tends to fall. Dr. John Brownlee² has proved that fertility decreases regularly as the size of the tenement increases up to six or seven rooms. He has also shown that as the size of the tenement increases infant mortality falls. In tenements of over nine rooms the infant mortality is less than one-third of the rate in one-roomed houses. And yet "the saving of infant life in the more comfortable tenements compensates to but a slight extent for the lower fertility."³

In the Suez Canal zone between 1901 and 1910 the death-rate was reduced from 30 to 19 per 1,000, and, as infant mortality was also reduced, an increase of population was expected. But, as Dr Halford Ross has shown,⁴ there was no increase of population because, when social conditions were improved, death-rates reduced, and a fever-stricken town converted into a health resort, the *birth-rate fell* of its own accord.

The oldest example in history of the association between hard social conditions and a high birth-rate is that of the Israelites, who when oppressed by Pharaoh multiplied exceedingly.

¹ Dr. John Brownlee, *vide The Declining Birth-rate*, p. 156

² *Ibid.*, p. 355.

³ *Ibid.*, p. 356

⁴ *Problems of Population*, p. 382

STATISTICAL PROOF

During the past 100 years social conditions in England have gradually improved, and the following table, taken from the Census report of 1911, shows the decline in the average size of family in England and Wales since 1851.

TABLE I

Table showing the total families of all sizes per 1,000 marriages where the wife's age at marriage was twenty-five to twenty-nine.

No of Children Born.	Before 1851	1851 to 1861	1861 to 1871	1871 to 1881	1881 to 1886	1886 to 1891	1891 to 1896.
0	73	86	98	103	104	113	116
1	68	41	50	62	81	100	121
2	45	60	68	91	120	139	165
3	73	73	81	109	131	145	159
4	82	88	98	119	132	130	131
5	64	103	110	119	118	110	102
6	122	132	122	114	99	89	79
7	146	118	113	97	80	67	55
8	68	111	99	76	57	46	36
9	32	83	70	50	35	28	20
10	54	49	43	29	21	17	9
11	41	27	22	15	10	8	4
12	14	16	13	8	6	4	2
Over 12	18	13	11	8	6	4	1
Total	1,000	1,000	1,000	1,000	1,000	1,000	1,000

The size of family which predominates is underlined in each period, and the figures show that the

size of the family in England and Wales has declined since 1851. Large families have become less numerous and small families have become more frequent.

It is also certain that ascending the social scale, class by class, the number of children in the family gradually diminishes, until we come to the old English nobility, of which 19 per cent. are said to be childless. In England and Wales during 1911 the number of births per 1,000 married males under fifty-five years of age varied according to social status in the following manner :—¹

Unskilled workmen	.	.	.	213
Intermediate class	.	.	.	158
Skilled workmen	.	.	.	153
Intermediate class	.	.	.	132
Upper and middle classes	.	.	.	119

The figures also varied according to the father's occupation as follows :—

Solicitors	.	.	.	100
Clergymen (C. of E.)	.	.	.	101
Medical practitioners	.	.	.	103
Textile workers	.	.	.	125
Agricultural labourers	.	.	.	161
Costers, hawkers	.	.	.	175
Earthenware workers	.	.	.	181
Miners	.	.	.	230
Dock labourers	.	.	.	231

¹ *The Declining Birth-rate*, pp 253-4

These figures cannot be wholly explained by the practice of contraception. In that event we should have to assume not only that contraceptives are most used by solicitors and clergymen, but also that a knowledge of artificial birth control is possessed by agricultural labourers, but not by dock labourers ! However, the falsity of this, as of every other neo-Malthusian argument, can be very easily demonstrated.

From the Census of 1911, Dr. T. H. C. Stevenson ¹ recorded the number of surviving children born per 100 marriages, distinguished by social class, duration of marriage, and age of the wife at marriage. As the figures represent only the survivors in 1911 of these marriages, they do not absolutely correspond to the birth-rates in the different classes since 1851. And, as the number of survivors is smaller amongst the poorer classes owing to their higher death-rate, these figures are, if anything, an *understatement* of the difference which has *always* existed in the birth-rates of different classes. I have set out Dr. Stevenson's figures in the table on page 207.

That table is a complete demonstration of several facts. In the first place, as far back as reliable figures can be obtained, the poor have always had more children than the rich, and under conditions

¹ *Proceedings of the Royal Statistical Society*, 1921

of hardship the birth-rate has *always* been higher than in circumstances of ease. In the second place, *pari passu* with improvements in the standard of living amongst all classes since 1851, there has been a gradual fall in the fertility of all classes

TABLE II

Children born per 100 Families : Standardised Rate

Date of Marriage		1851 to 1861	1861 to 1871	1871 to 1881	1881 to 1886	1886 to 1891	1891 to 1896	1896 to 1901	1901 to 1906	1906 to 1911
Duration of Marriage in Years.	Over 60	50 to 60	40 to 50	30 to 40	25 to 30	20 to 25	15 to 20	10 to 15	5 to 10	0 to 5
Upper and Middle Classes	682	662	607	497	413	357	303	242	171	70
Skilled Labour	729	746	696	615	544	482	405	314	211	86
Textile Workers	732	696	648	567	501	435	359	275	185	76
Unskilled Labour	781	763	715	652	596	541	463	362	242	100
Agricultural Labourers .	820	779	719	667	618	552	470	363	246	101
Coal Miners .	870	797	777	717	671	610	517	399	263	105

The aristocracy of a hundred years ago had a much harder life than their successors of to-day, and many of the troubles which now afflict the poor were once the troubles of the rich, as witness that which is politely known as "the de-lousing problem," in the courts of Elizabeth and of Marie Antoinette.

At the Royal Statistical Society,¹ Dr. T. H. C.

¹ *Proceedings of the Royal Statistical Society*, December 16th, 1924

Stevenson, of the General Register Office, pointed out that the birth-rate for Europe as a whole, which, during the nineteenth century, so far as covered by official records, had not varied very greatly, had taken a sudden downward plunge with the advent of the twentieth, and had continued to fall at an accelerating pace until the outbreak of war in 1914 spoilt the comparison.

The very suddenness of the change suggested interference with the laws of Nature, as by increased practice of contraception, rather than a change in the laws of Nature themselves; though even on that theory he found it very difficult to explain to himself why or how so many millions of people had come to make such a radical change in their lives with such precipitancy and simultaneity

Dr. Brownlee stated that he was quite willing to believe that birth control had something to do with the decline of the birth-rate, but it was also a matter of race physiology. It had often happened in the past. One had the Vikings pouring out of their home country and conquering other countries; then they suddenly ceased. It was some outside factor which stopped them, not birth control, and he preferred to call it race physiology. Possibly in years to come we might learn something about race physiology, but it was an extraordinarily

difficult subject, and no statistician had yet been found to tackle it.

Sir W. Beveridge said that the only places where there was any check to the fall in the birth-rate was where the population was very sparse or in Roman Catholic countries. In his opinion there was only one explanation for it, and that was a better knowledge and use of contraceptives.

The evidence indicates first, that improved social conditions in England and Wales have influenced the decline in the birth-rate, apart altogether from artificial birth control ; and second, that a natural decline in the birth-rate has been artificially aggravated by the use of contraceptives.

A REASONABLE WAGE

The Law of Doubleday is an assurance that if the social conditions of unskilled labourers were improved there would be a natural fall in the high birth-rate in the slums. At present the "living wage" of the unskilled worker is based on an average family of two parents and three children, an average too small to ensure even a stationary population. As things are, it is obvious that bachelors and families below the average are getting more than their share of this "living wage," and that for larger families it is not a living wage at all.

Miss Eleanor Rathbone has pointed out that of all male workers over twenty years of age in England, only about 8 per cent. have the standard family of a wife and three children under fourteen. The remaining 91·1 per cent. of male workers are situated as follows :—

- 27 per cent. are bachelors or widowers without dependent children.
- 24·7 per cent. are married couples *without* children, or with *no* dependent child under fourteen years of age.
- 16·5 per cent. have one dependent child.
- 13 per cent. have two dependent children.
- 9·9 per cent. have more than three dependent children.

These anomalies of the industrial system could be rectified by a basic wage for unmarried men, with an increment after marriage, and a further increment for each child. Those who advocate "family endowment," a somewhat unfortunate term, are convinced that these increments would have to be paid by the State, as otherwise there would be a premium on the labour of unmarried men, and also a very real danger that payment of these allowances by employers would be made an excuse for raising prices, whereby the present evil would be continued. Against payment of allowances by the State, there is the temptation for a man to do no

work and to live on the allowances paid in respect of his wife and children. This temptation would not arise if the State, in place of paying out the allowances, taxed at the source a minimum wage, based on the amount required to support a family of seven persons in reasonable comfort. This tax would be so graded that the bachelor would be left with an amount sufficient to support one person in reasonable comfort. The employer would be responsible for collecting the tax, and one advantage of this method would be that even unskilled labourers would pay income tax according to their responsibilities.

Again, amongst the middle, professional, and upper classes, rebatement of income tax in respect of the number of children should be made on a scale of generosity hitherto unknown. In so far as the birth-rate of these classes is being artificially restricted on account of high taxation, a relief from this burden should lead to an increase in the number of their children.

And where is the money to come from? From the same sources as produce it to-day, but the burden of taxation would be more justly distributed.

By the Law of Doubleday this and other schemes for social amelioration are possible, whereas by the Law of Malthus they are all foredoomed to failure.

CHAPTER XIII

THE LAW OF GROWTH

EACH generation tends to think of itself as

“I, the heir of all the ages, in the foremost files of time,”

and forgets those dead fragments of lost civilisations, once as great as our own, scattered over the face of the earth.

During the past five centuries many writers have prophesied the over-population of the earth—but always at the end of a hundred years from the time at which they wrote. Yet the thing has never happened.

The law governing the growth of population was first discovered by the Belgian mathematician, Verhulst, as long ago as 1838. He called it the “Logistic Curve.” This curve resembles the letter S, drawn out until each end of the letter is almost parallel. In this curve the increase is most rapid in the first half, and becomes slower in the second half, until at last there is no further increase. Perhaps the most remarkable thing about this discovery was that it was lost. Although published

in a scientific journal in 1838, the Logistic Curve was unknown to scientists until recently re-discovered by Professors Pearl¹ and Reed of Baltimore, who demonstrated its existence by laboratory experiments.

These experiments have revealed some remarkable facts. Not only do all human societies, in various stages of civilisation, increase and multiply in accordance with the logistic curve, but the growth of all living things follows this Law. If we measure the growth of a pumpkin or a white rat we find the logistic curve. Or again, if we count the multiplication of yeast cells, of fruit flies in milk bottles, or the population of America, the Law of Verhulst is apparent. The growth of all living things from the simplest to the most complex follows the same immutable curve. This means that if the inhabitants of a country were leading a pastoral life, the population of that country would increase according to the logistic curve until it became stationary. If later on came improvement in arts, crafts and inventions, population would once more increase—on the logistic curve—until it again became stationary.

The curve must obviously be produced by the action of certain forces controlling the growth of population. What are those forces?

¹ *The Biology of Population Growth*, London, 1926

Professor Pearl had sought to solve the mystery by a series of most ingenious experiments with fruit flies. He took a number of milk bottles of uniform size, each containing the same amount of banana substance as food for the flies. In the first bottle he placed one pair of mated flies ; into the second two pairs, and so on, until he had a bottle into which fifty pairs of mated flies were introduced. The population of flies in each bottle was counted from day to day, and the results were amazing. The relative fertility of the single pair of flies was highest of all, over twenty-one offspring per day per female. Moreover, the fertility of the flies progressively declined as the number of flies originally introduced into the bottles increased. In the bottle originally containing fifty mated flies the fertility was less than one offspring per day per female. He attributes these results not to lack of food supply, but to density of population ; because the fall in the fertility rate was progressive and was apparent even in the presence of an ample food supply. Thus the fertility of the single pair of mated flies was greater than the fertility of two pairs of mated flies, although there was ample food for fifty pairs of flies.

Density of population amongst domestic fowls has been proved to have a constant influence on

egg production. At the Maine Agricultural Experimental Station pens were constructed, some to hold fifty birds and others to hold a hundred birds. The area of the hundred birds' pens was double that of the fifty birds' pens, so that in all pens there was 4·8 square feet of floor space per bird. Over a period of three years it was found that in the hundred birds' pens the average egg production was less than that in the fifty birds' pens. On an average the annual egg production of each bird in the large flocks was six eggs less than that of birds in the small flocks. Other pens were built to hold 150 birds, each bird being allowed 3·2 square feet of floor space. In these pens the average annual egg production per bird was found to be twelve eggs less than that of birds in flocks of 100, and eighteen eggs less than that of birds in flocks of 50.

The density of human population is measured by counting the number of people living on each square mile, or each acre of land. Another method of measuring density is to divide the area of land by the number of persons living thereon, and thus credit each individual with the possession of an equal amount of land. For example, the density of population in England, Scotland and Wales may be measured by stating that each inhabitant might own 1·3 acres of land ; whereas in the com-

bined territories of Canada, Newfoundland, South Africa, Australia and New Zealand, each individual might own 213 acres. Here, in Britain, are 485 inhabitants per square mile, whilst abroad there are only three people to each square mile. There is a reality and a contrast.

Density of population lowers the fertility of flies and hens. Does it also tend to reduce the human birth-rate? That is a question of great interest and difficulty. Men and women may live in an overcrowded city or in some lonely hamlet, but, unless they are imprisoned in gaols or other institutions, they are never subject to that constant pressure of population which existed in the experiments of flies and hens. Those who sleep at nights in overcrowded slums may spend their days selling wares in the open streets; and the man who sleeps in a spacious suburb may work by day in the crowded square mile of a city. During the nineteenth century there were almost invariably fewer people per acre in the richer parts of our cities than there were in the poorer parts. Rich people lived in spacious houses surrounded by large gardens. Poor people lived in overcrowded slums. In the slums there were high death-rates, whereas in the less crowded areas there were low death-rates. This relation between density of population and

death-rates was so constant that Farr's Law, namely, that the death-rate varies as the tenth root of the density, held true for England and Wales from 1881 to 1901. In the present century a great economic change has occurred. Now, as then, there are dense populations of poor people living in various parts of London, but there are also dense populations of rich people living in luxury flats in the West End. Density of population no longer of necessity implies poverty, and when American statisticians dispute the truth of Farr's Law they forget that conditions have changed. A dense, poor population will have a higher death- and birth-rate than a dense, rich population.

After an exhaustive statistical investigation of the birth-rate in 132 American cities, Professor Pearl concludes that if the total population, the wealth per head, the standard of education, and the number of persons per house be reduced to a common denominator, then density of population can be proved to have the same effect on human birth-rates as it has on populations of flies and hens.

Professor Pearl is content with the factor of density. Yet why should density of population restrict the birth-rate? In the case of flies and hens, the greater the density the less would be the facilities for exercise. From the Law of Doubleday and

from the experience of breeders we know that the overfed, indolent animal is less fertile than the animal which is adequately fed and exercised. From this it would appear that physical exercise is one determinating factor of fertility. This factor would go to explain the difference between the high birth-rate in a dense area of poor people, and the low birth-rate in a dense area of rich people. Amongst the poor there is more physical work and less over-nutrition than amongst the rich. In this reasoning I leave out the factor of birth control, because although it is one factor it is by no means the only factor to explain these differential birth-rates. Neither flies nor hens practise birth control, and a biological law must apply to every form of life. At all events there is ample evidence that Nature's most stupendous act, the reproduction of the species, is controlled by vast and complex forces of which we know very little.

CHAPTER XIV

THE NEXT WAR

AGE of Speed ! Faster and ever faster on land, sea, and air. Record after record smashed. German inventor inside steel asbestos rocket goes roaring to the clouds. Russian girls with parachutes drop through miles of air. Death also scoring. Toll from heart disease now the highest ever. Darling, does it really matter? Faster and ever faster Red—amber—green—amber—red. Outside the speed limit, let her go. Mile upon mile of cars. Pull her out to get ahead. Fifty-five miles on a bend, and passing the other cars one by one. Car approaching at forty. No room to cut in. . . Head on. Cries drowned by the screaming brakes Crash. Silence. Age of Speed.

“ Three of ’em dead, and four hurt, sir.”

“ Put them at the side of the road for the ambulance. Place a man a hundred yards each side of the wreckage, till it’s cleared. Let the others through fifty down, twenty up. Jump to it. The road will be jammed for miles.”

*That Week's Paper***TOLL OF THE ROADS**

More Killed but Fewer Injured.

Killed, 120.

Injured, 3,756.

*Same Paper Next Week***TOLL OF THE ROADS**

More Injured but Fewer Killed.

Killed, 119.

Injured, 5,231.

Age of Speed ! Senseless and insensate, we don't know where we're going. When we get there we don't know where we are. When we return we don't know where we've been. Faster and ever faster. On, and on, and on, until the whole machine explodes, and the peace of the jungle comes over the earth for another æon or two.

One of the Principal Secretaries from the White House invited the Chinese Ambassador at Washington and other friends for a run in a new automobile. They went from Washington to Philadelphia. On arrival at their destination the entire party, with the exception of the Ambassador, were greatly excited. The owner of the car turned and explained what had happened ; " A wonderful car, Your Excel-

lency. We've beaten the record from Washington to Philadelphia by twenty minutes. Think of it, to be here twenty minutes sooner than anyone else has ever been ! " The Ambassador nodded gravely : " May I ask you one question ? "

" Sure, Excellency."

" What are you going to do with the twenty minutes you have saved ? "

In the shade of the ancient wall to the left of the Porta Pia, as you enter Rome, is the garden of the British Embassy. Very lovely it looked on the afternoon of April 15th, 1912, and the guests at the party were happy. Sunshine, music, teas, ices, lovely women, gaily flowered dresses, picture hats, bright parasols. Chatter of this, chatter of that, and clatter of cups. Like a cold wind came the news. The music and the chattering ceased. Men looked grave, and many a woman wiped her eyes. Some had friends on board. The *Titanic* had gone down. One thousand five hundred and three drowned, and a wave of sorrow passed over the civilised world.

Comes the Great War in 1914, and the first casualty lists. Country horror-stricken by their magnitude. Soon we got used to them. They were taken for granted, and were only read carefully by those whose loved ones were in the danger zone. Our callousness towards human life has survived

the war. We accept it as inevitable, aye, as a natural risk in life, that every week over a hundred people should be killed outright, and four or five thousand should be maimed on the roads of England. In that pre-war England, for whom thousands died in battle on land and sea, the Toll of the Roads would not have been tolerated for a single week. A public outcry, led by the Christian Churches, for the most part now so empty, and all so strangely silent on the nation's weekly sacrifice to Moloch, would have driven the Minister of Transport from Office. He is doing his best, but we have all changed. In a car I dislike pedestrians and cyclists. When walking I dislike cars.

Drastic measures are required to stop this slaughter. The railway companies are not allowed to run trains on the roads, and the public are forbidden to walk on the railroad. Yet pedestrians are forced to cross roads and streets along which motor cars are passing at a speed exceeding that of many trains. It would be safer for anyone to cross a railway line because there are fewer trains than cars. I live near Kensington High Street, and along that thoroughfare every day between 8 a.m. and 8 p.m. the motor traffic averages thirty thousand cars. It would be idle for anyone to pretend that the existing law is enforced. The motor cars do not

give way to pedestrians at the appointed crossings, and it would be no consolation to a pedestrian, who walked over a crossing and was killed, to know that the motorist would be unable to plead that the victim was guilty of negligence. The authorities appear to think that widening the streets will make for safety. So far from making the roads safer, the wider they are the more dangerous they become to a pedestrian who wishes to cross. The danger-zone has been increased.

The remedies are obvious. Special motor roads should be constructed as in Germany and in Italy for fast motor traffic. On these roads no one is allowed to walk. On the other hand, the existing law as to the speed-limit and the rights of pedestrians on all ordinary roads and streets should be rigorously enforced. The practice of punishing offenders by inflicting a fine has proved inadequate, and many experienced magistrates believe that only imprisonment would act as a deterrent.

In the last war during an aerial bombardment of Deal an ancient Sergeant exclaimed: "The South African War was a Sunday School treat compared to this." The horrors of the Great War in comparison to the horrors of the Next War will prove to have been a Sunday School treat. Mr. Baldwin said in the House of Commons on Novem-

ber 10th, 1932 : " I think it is well for the man in the street to realise that there is no power on earth that can protect him from being bombed. Whatever people may tell him, the bomber will always get through. . . . The only defence is in offence, which means that you have to kill more women and children more quickly than the enemy if you want to save yourselves."

Another terrible contingency is that the next war may open without an ultimatum. A nation who believes itself about to be attacked might, in a moment of panic, bomb the capital of its potential enemy to destroy his morale and claim this to be a defensive measure. If Britain were pledged to join action against the aggressor, we should have to decide who was the aggressor " Collective security " would become rather nebulous. The effects of a modern air raid would be more disastrous than anything we have experienced in the past.

In March, 1918, a German bomb, weighing 672 lbs., was dropped in Paddington. The explosion killed twelve people, injured twenty-three, and damaged 400 houses in the vicinity. The latest bomb with which experiments have been made weighs 4,000 lbs., and when dropped on an open plain the explosion made a crater 64 feet in

diameter, 19 feet deep, and displaced 1,000 cubic yards of soil. No wonder Mr. Baldwin in the speech already quoted gave this warning: "In the next war you will find that any town which is within reach of an aerodrome can be bombed within the first five minutes of war from the air, to an extent which was inconceivable in the last war, and the question will be whose *morale* will be shattered quickest by that preliminary bombing. . . . Aerial warfare is still in its infancy, and its potentialities are incalculable and inconceivable." With the development of the Air Arm, War has ceased to be a duel. It is now a death pact, and again to quote Mr. Baldwin. "Who in Europe does not know that one more war in the west, and the civilisation of the ages will fall with as great a shock as that of Rome?" It will be a poor end to the eternal struggle of the mass of mankind through past centuries to create a happier and a better world. In a noble passage in *Force*,¹ Lord Davies sums up our present predicament: "We have not yet, thank God, reached this culminating point in the onward march when, in one brief period, it may be a few weeks, months, or years, humanity is hurled back through the space of centuries to find itself once more inhabiting caves and jungles. The path

¹ *Force*, by Lord Davies. London, 1934, Constable, 3s 6d. net.

whenever the vote goes against an individual member he resigns. Germany left, Japan left, and now Italy (July, 1935) has flouted the League.

The Japanese-Chinese war was in full swing for a year before the League of Nations Commission reported that Japan was the aggressor. That being so, it became the duty of signatories to the Covenant to put in operation sanctions against Japan. What did we do? Sir John Simon stopped the exportation of arms not only to Japan but also to China for a period of little more than twenty-four hours, when he announced that as other nations were continuing to export arms to the belligerents it was impossible for us to act otherwise.

For peace in Europe it is necessary to have an International Court of Equity administering a code of international laws, which has yet to be evolved, and that the nations agree to accept the decisions of such a Court without question and without resort to force. To ensure that this happens it is necessary that the International Court should have at its disposal an international force so powerful that no nation would dare to oppose its decisions. That force must be the Air Arm to which each country would contribute its quota, and all existing military air forces would be abolished. In every country there would be a denationalised zone,

great aerodromes for the International Air Force. That is the ideal of the New Commonwealth to which Lord Davies is dedicating his life. Before brushing all this aside as an idle dream the reader should remember that not so long ago France was willing to place her bombing machines under the sole jurisdiction of the League of Nations. To that proposal the British Government gave the cold shoulder. When Hitler was willing to abolish submarines, France would not agree. Yet if only three great countries, Britain, Germany and France, would agree to a Court of Equity, whose decisions would be backed by an International Air Force, every other nation would eventually come in. The Court of Equity would differ from the League of Nations in that it would be a Court of Judges, before whom rival statesmen would plead their cause. This would mean a surrender of external sovereignty, but unless we turn our backs on Europe it is our only hope of peace and security, and of relieving the terrible burden which makes Britain to-day the most heavily taxed country in the world. At the present time Europe is spending two million sterling a day on armaments. If that expenditure were diverted into social services, how much happier the nations would be. The appalling alternative to the Court of Equity and International Air Force

is War, and recent aerial exercises over London, Paris and Berlin have shown conclusively that there is no defence of a city against bombs. Without the support of the Dominions, Great Britain dare not engage in another European War. Neither our man power nor wealth could afford it. Now the attitude of the Dominions is as clear as noonday : " If you are attacked, we will come to your aid, *but not otherwise.*"

The present outlook in Europe is chaotic, and literally changes from day to day. In the old days Britain relied on Treaties which lasted for years. After the war we relied on Pacts which lasted for a matter of months. To-day we rely on Conversations, the results of which last for a day or two. Our motto seems to be . A talk a day keeps War away, for of such is the Garden of Eden

To quote Lord Davies ¹ :—

" As an illustration, let us consider for a moment what happened at Geneva when the Lytton Report was presented to the Assembly. On Friday, February 24th, 1933, our Foreign Secretary, in conjunction with the representatives of forty-one other nations, voted for the adoption of this report and thus, on behalf of Great Britain, condemned Japan's acts of aggression in Manchuria. A further

¹ *Force*, by Lord Davies. London, 1934, Constable, 3s. 6d. net

resolution was adopted constituting a Committee of Twenty-one to advise upon what further steps should be taken to render operative the unanimous vote of the Assembly. It was also agreed that no member of the League should take independent action, and that whatever coercive measures were considered practicable should be undertaken collectively. Captain Eden, the British Under-Secretary, remained in Geneva to serve on this committee. Sir John Simon returned to London. On the following Monday he announced to a bewildered House of Commons that the British Government had determined to place an embargo upon the export of munitions to Japan and China. On the previous Friday he had declared by his vote in the Assembly that Japan was the aggressor—China the victim of aggression. Almost within forty-eight hours he proposed to mete out the same treatment to the criminal and the victim. At one stroke he stultified his vote, undermined the collective responsibility of the League, repudiated the pledge given on Friday that no independent action should be taken, and left Captain Eden completely stranded in the Committee of Twenty-one.

“This is a fair sample of the tortuous path of diplomacy even when it is carried on in conference or on the floor of the House of Commons. There

was no effective protest. The Press was silent and the House of Commons mute. Is it surprising that foreigners should mistrust us, or that Sir John Simon's antics should be regarded at Geneva as another proof of our perfidy and double dealing?

"All through the long-drawn-out Sino-Japanese dispute it was clear that our sole preoccupation was to emasculate Article XVI and to extract even the milk teeth of the infant League. Our representatives were busily occupied engaging the potential policeman in animated and polite conversation, raising objections and prolonging the discussion whilst the burglar rifled the premises.

"It is beside the point to argue that other nations are guilty of similar conduct. That is perfectly true, but people who live in glass-houses cannot afford to throw stones. Let us be candid and admit that we are no better and, let us hope, no worse than the others."

In our foreign policy there is not the slightest suggestion of stability. Yet if our European policy be leading Britain to destruction, who but a lunatic would say, "We cannot go back." Having rebuked Germany for breaking the Treaty of Versailles in that she had built a large air force, Britain proceeded to break the same treaty by entering upon a unilateral naval agreement with Germany. It is

the duty of statesmen to look ahead, but not one of ours appears to have considered what Britain's attitude will be when Germany demands, as eventually she will, the return of her colonies.

To quote Lord Davies ¹ once more :—

“ There is only one defence against a potential aggressor, that is to implant in his mind the certainty of an overwhelming reprisal by a superior force, under the control of an international executive and backed by the moral support of an impartial authority—the League. There is no other way of combining moral and physical force so as to produce the maximum deterrent effect upon the would-be disturber of the peace.

“ But ever since the signing of the Covenant successive British governments have consistently fought against the idea of pooled security. Our rulers have lost no opportunity of whittling away our obligations under Articles VIII, X, and XVI. We have turned the League into a debating society instead of developing it into an authority

“ Are we so infernally proud that we are unwilling to avail ourselves of an international sanction against aggression? Are we so fat and flourishing that we can afford to dispense with the services of an international police force? Are we so certain that our

¹ *Force*, by Lord Davies London, 1934, Constable, 3s 6d, net.

strong right arm alone will suffice to deliver us in the day of trouble? A few short years ago we did not despise the assistance of other arms, however strong or puny they might be. Have we so soon forgotten the lessons of the War? In those critical days we left no stone unturned to call to our aid the resources of any nation, great and small alike."

If Europe will not accept the peaceful solution of a Court of Equity and an International Air Force, but is bent on war, then let Britain follow the advice of Lord Beaverbrook and turn from the bedlam of Europe towards our own great Empire overseas.

Recently when asked to speak in Dublin, I suggested that they might be interested in Lord Davies' proposals. In reply I received a very strange answer: "Our people would not be interested. You see, we are so far from Europe." Would to God we could say the same! And yet, without the Dominions behind us, we are no greater than the smallest Power in Europe.

CHAPTER XV

THE DOMINIONS CALLING

WITHOUT the British nations overseas Britain is not a Great Power, and in any event we ought to make every effort to develop the prosperity of Canada, Australia, New Zealand, and South Africa to our mutual advantage.

Recently in a letter to *The Times* the official secretary to the Commonwealth of Australia pointed out that over a period of fourteen years up to the end of 1933 the United Kingdom exports to Australia amounted to £667 0 millions and to Argentina £351·8 millions, whereas the imports retained in the United Kingdom from Australia reached a total value of £635 3 millions and from Argentina £930 2 millions. Thus over this fourteen year period the visible trade balance was £31·7 millions against Australia and £578 4 millions in favour of Argentina.

In plain English this means that we gained over thirty-one millions from Australia and lost over 578 millions to the Argentine. The comparatively

small number of people who have money invested in the Argentine will no doubt claim that they got this money back in dividends. No doubt they did, but why on earth should a handful of speculators benefit at the expense of the British Empire? That is one of those simple questions which horrifies people who like to leave bad alone. The truth of the matter is that the influence of private financiers in the City of London is too great and has lasted too long, so far as the British Government is concerned.

Why should we favour Argentina at the expense of Australia? It is said that nearly £500 millions of British capital has been invested in Argentina and that unless we import meat from there no dividends could be paid on this capital. Even as things are, the *South American Handbook*, 1935 Edition, writing upon British investment in Argentina, states: "No interest was paid in 1933 upon £215,325,000." No dividends on nearly half the invested capital! Now if a private individual invests his money in a foreign country he does so at his own risk, and he has no right to expect that his dividends should be paid at the expense of the British Empire. Yet that is what we are doing at the expense of Australia by our quota on her exports of meat. It is difficult to estimate

the enormous amount of British capital invested in various enterprises in Australia, but at least we know that £485 millions of United Kingdom capital is invested in Australian Government Bonds and other Government securities. The interest on that capital has always been paid, although these payments have meant sacrifice on the part of the Australian people, who have voluntarily accepted lower rates of interest on their own internal Government loans, rather than default to the investors in the United Kingdom. In Australia the pound is worth 25s, and so for every pound of interest received by the owner of Australian Bonds in London, some Australian has had to pay 25s. No wonder Australians become restive when told, as they periodically are told, that no more Australian meat must be sent to England until the Argentine quota is satisfied. They would not mind if their meat was not accepted in order that the Home producer, who must come first, should have a fair share of our market. They would not mind if they knew that the quota meant that New Zealand, Canada, and, to a very small extent, South Africa, were being given a fair share of our orders. What they would like is that so long as they have any meat to export, we should refrain from buying from the Argentine. Does Great

Britain fear the Argentine? Is it possible that unless we give her a quota for meat she will seize the Falkland Islands? A curious case arising out of disputed nationality was settled, according to a paragraph in the *Star* of July 19th, 1935, at Buenos Aires in favour of Francis Ushuaia Lewis, a Falkland Islander. "Lewis's identity certificate was sequestrated recently, says Reuter, because it declared him British, whereas the Argentine view is that the Falkland Isles are Argentine territory. He was later prosecuted for non-enrolment in the Argentine army under the conscription law. The case was quashed, the judge giving as his reason the fact that there is no enrolment station in the Falkland Isles."

Australia could not possibly supply all the meat required for the British Market. If we took every carcass from Australia, we should still have to buy from the Argentine. As long as there is a beast in Canada, or a carcass for exportation in Australia or New Zealand, we should refrain from buying in the Argentine. In return for this, what would Australia do for us? For one thing she could buy more of our motor cars, and would gladly do so provided we built a car suitable for the Australian roads. The Americans have done this, and consequently have most of the Australian motor trade,

although Australia would much prefer to buy from the Mother Country.

As our manufacturers refuse to build cars suitable for the Australian roads, Britain in 1935 lost her position as the main source of the motor cars imported into Australia. Latest figures show a tremendous increase in the number of American cars imported (says the British United Press on July 19th, 1935). This has had the effect of reducing Britain's share of the Australian market from 64 per cent. three years ago and 41 per cent. last year, to only 28 per cent. The total value of cars in the ten months to the end of April was £4,038,651, of which £1,964,342 worth came from the United States, £1,140,357 worth from Britain, and £943,952 worth from Canada. In the three years up to 1930—before the depression—the value of British car imports remained fairly constant at about £1,400,000 a year.

With increased prosperity in Australia and in the other Dominions, they would once more welcome suitable settlers, for the most part young people. The real difficulty has been most accurately stated by Henry Somerville :—" The problem with which the British Empire is faced is not the simple problem of redistribution of population. It is the problem arising from a decline in Great Britain's fecundity.

The Mother Country, it would seem, is going through the change of life. Emigrants must be recruited from the young. Only those countries with an abundance of young people can afford emigration unless they are themselves to stagnate and decline. It is normal for two-thirds of the emigrants to be under 30 years of age. It is no use pointing to the middle-aged and the aged of this country as surplus population available for export. Indeed, the tendency of the Dominions is to regard male emigrants as too old not only at 30, but at 20. Their insistent demand of late years has been for boys and girls. Children under 17 going to Canada, nominated for farm work, were offered passage free. Australia gave free passage to children under 12, and the fare for juveniles between 12 and 17 was only £5 10s. Married couples got very low fares for themselves if they were taking with them at least one child under 19. New Zealand was giving free passage to boys under 17 and girls under 19. The regulations for free and reduced passage rates showed very clearly what ages the Dominions desired immigrants to be. Now it is precisely in these ages that the population of Great Britain is falling alarmingly short."

Dean Inge sees in the Dominions a home for many of our unemployed :—"As a patriotic Eng-

lishman," said the Dean, "I don't want fewer Englishmen in the world. That would be a pity. An elderly population, too, might be rather less enterprising ; and also there is an argument I always disdain to mention—the cannon fodder argument.

"I have a remedy of my own. It may be quite wrong. That is State colonisation. It is quite certain that the Dominions do not want, and will not take, individual English immigrants, who may take the bread out of the mouths of their own people ; but they would not, I think, have the same objection to self-supporting, independent communities.

"I suggest the State should buy tracts of good land in Canada, Australia, New Zealand, and Tasmania and put down there self-supporting, self-contained communities who would not be any burden on the country, but a great asset. I further suggest that each of these communities should be drawn from some one English county so that people would know something of each other "

Dean Inge said the results of the restriction of emigration were serious for Europe, and were one of the causes of the rapid fall in the birth-rate during the last few years. Prohibition of emigration was usually a mistake for the prohibiting countries.

"There is a great danger especially in the case of Australia (he went on) of armed invasion by the excluded races. A successful war with Australia would, undoubtedly, pay either China or Japan."

The Dean added that the population of this country would begin to decline in 1941. "In my opinion (he said) the chief reason why the upper and middle classes have such small families is the enormous expense of education. In some countries—in Sweden, in Holland and, I think, in Germany—the upper classes have practically given up the struggle and are content to send their children to the State schools. The consequences are already becoming apparent. The professional classes in Sweden have as large families as the working man. Although I should be sorry to see anything happen to our public schools—I think that is what is going to happen here. In fifty years we shall see children of all classes having much the same education in the schools of the State, and there will be no further inducement to the professional classes to restrict their families to one or two children."

To that I would add that in 1924 I saw a liner, off South Uist, collecting whole families to be transhipped to Canada. They were leaving the unfertile soil of the misty island to form a settlement on the banks of the St. Lawrence, and, *pace* Dean

Inge, their Parish Priest was going with them, and it was he who had arranged this experiment in Empire settlement.

Edmund Burke once said that great empires go ill with little minds, and very few people have a clear perception of the size of Australia, which is a Continent in itself. Indeed in the City of London there may be some who regard the British Empire as an Oil Share in the middle of Mexico.

In the great basin of the Murray River there is a land of sunshine, well watered, very fertile. It is called the heart of Australia. And the size of this district—because in comparison to the totality of Australia it is only a district—is equal to the combined areas of Germany, France, and Italy—countries that carry a population of 148 millions. In the heart of Australia are only one million people, and in all Australia there is only one inhabitant to every ten in Japan. An entire continent is thus held by a population of something over six million people—a population smaller than that of London to-day. Moreover, of 6,116,000 people in Australia, over 2,000,000 are living in six cities. When the Chinese Consul made a tour of Australia this is what he wrote : “ I saw more trees than men. The Almighty gave Australia to the Australians, and they could not use it, so He took it away from

them, and gave it to the English. If the English do not use it, He will doubtless take it away from them."

This is no abstract idea, clothed in the glamour of rhetoric. It is a reality and a contrast. In England, Scotland, and Wales, in an area of 88,748 square miles, there are 44,790,485 people, or 504 inhabitants to the square mile: whereas in Canada, Newfoundland, South Africa, Australia, and New Zealand there are 7,442,091 square miles with a population of 27,479,281, or four inhabitants to one square mile. That contrast ought to be apparent to all, to the overcrowded wretches in our slums, to the loneliest settler on the frontiers of civilisation. Here at home in the cities are populations overcrowded and underfed, herded together, sometimes worse than cattle, in the one- and two-roomed house, and there abroad, in the midst of air and sunshine, lies the Imperial wilderness.

There is no reason whatever to assume the inevitable and lasting supremacy of the white race, but there is every reason to believe that if the white races do not occupy the great empty spaces of those temperate climates in which their offspring can continue true to ancestral type, these places will pass into the hands of some more virile people.

Of the total population of the earth, estimated at 1,600 millions, 500 millions are white and 1,100 millions are coloured. It is also obvious that in the vast overseas dominions of Britain there are great empty spaces, where an untilled soil and excellent climate await a population. Is that population to be white, yellow, or black? The total population of the Empire has been estimated at 447 millions; but in that population there are only 65 millions of white people, *including* French-Canadians, Boers, and others of foreign extraction; and of those 65 million whites only 18 millions are resident outside the United Kingdom. In other words, outside the United Kingdom the Empire is probably now held by not more than three million families of white people. In view of these facts, at what level are we to appraise the intelligence of those who advocate a restricted birth-rate even in our Colonies? At all events, the Director-General of Health in New Zealand announced that chief among the disquieting features affecting the public health was the very low birth-rate.

And our time for achievement is limited. It has been calculated that if the present rate of increase of population be maintained—a very uncertain assumption—two centuries must elapse before the unoccupied lands of the earth are settled and

developed in accordance with their agricultural potential.

Granting the assumption that the present increment of population will continue, then, at the end of 200 years, the population of the earth would be 6,000 millions instead of 1,600 millions.

As that distinguished geographer, Dr. Vaughan Cornish, has pointed out, this figure does not represent the final population of the earth, about which nothing whatever is known, but it does indicate that at the end of 200 years we may come to the end of an epoch—the end of the colonising period of history ; that the whole earth may then be parcelled out completely amongst the nations ; and that since nations once rooted to the soil are difficult to displace, those in possession at the end of the colonising period would be most likely to endure.

On that account, as Dr. Vaughan Cornish says, our time is limited to “ about two centuries, or six generations, in which to provide the temperate climates of the British Empire with a sufficiency of British stock to ensure the continuance of their British character.”

The real danger to Britain is that having created vast urban populations in the United Kingdom, she is now in the process of losing, through no fault

of her own, the industrial supremacy of the world. Thirty years ago in our great steel works there was usually a Japanese inspector. He watched the steel plates being forged, and then followed them to a shipyard, where he watched them being built into a ship for Japan. Twenty years ago he was still at the steel works, but not at the shipyard, because Japan was building her own ships with our steel. To-day the Japanese inspector has vanished. Japan is making her own steel and building her own ships. Our commercial supremacy was gained by our ability to manufacture the best goods at the cheapest price, and to dump them on the markets of the world. But now we have taught the coloured races the advantages of the factory system, and they are beginning to make and sell goods at prices with which white labour can never compete, and against that danger tariffs are a necessity. For example, the following facts, quoted from the *American Manufacturers' Record*,¹ should be realised by every working man in Britain and in the United States. The Chinese bulb blowers produce from 1,700 to 2,000 bulbs apiece per day. Their pay varies from 32 to 10 cents a day, in American money. The average production per operator in the United States is 1,000, and American bulb

¹ Quoted in *The British Dominions Year Book*, 1924, p. 241

blowers get \$10 a day, American gold. In other words, it costs one-fortieth to one-fiftieth as much to produce a glass bulb for an electric light in China as it does in the United States.

Again we know that in British India cotton mills have been established and manned by native labour, including child labour, which threatens the staple industry of Lancashire. The passing of our industrial supremacy is inevitable, and in place of that supremacy we should now seek to establish the greater security of an agrarian Empire at home and abroad. In Britain, in the Dominions, and in our mandated States are the markets of the future.

CHAPTER XVI

HOW NATIONS DIE

PROPHECY is a safe recreation provided you prophesy for 200 or 300 years ahead. No one can disprove what you say, and when the time comes none of your followers will be there to learn that your prophecy was false.

In 1801 the population of England and Wales was nine millions, and there were prophets who said that by 1901 the population would be 450 millions. In point of fact it was $32\frac{1}{2}$ millions. All these long-distance prophets ignore the existence of Providence, and imagine that national life goes on like a machine endowed with perpetual motion.

For the past eighty years the birth-rate has been falling, and yet population has increased, because there has also been a progressive fall in the death-rate and the average duration of life has increased. Since the beginning of this century the Registrar-General after each census has warned the country that the proportion of old people in the population was gradually increasing, and that, since there is

a limit beyond which life cannot be prolonged, we were approaching an era of rising death-rates. Then, unless the birth-rate rose, population would decline. The statesman who first appreciated the economic results of this change was Mr. Winston Churchill. When Chancellor of the Exchequer, he warned the country of how in the not far distant future the burden of taxation would fall on a small number of young people, who would be supporting a large number of old people.

In the 1935 Budget Mr. Neville Chamberlain foresaw the time when the British nations overseas might require the migration of large numbers of young people from the Mother Country. As an aid towards raising the birth-rate, he increased the income tax rebates in respect of children, so that for every child a rebate of £50 is allowed. With an income tax of 4s. 6d. in the £ this amounts to £11 5s., which is little enough for a child's maintenance.

Sir Josiah Stamp and other statisticians consider that in 1936 our population will reach its zenith. Thereafter the ebb tide will begin to flow. By the year 1954, not so far off, the number of children under fifteen will be halved, and the number of people between the ages of fifteen and forty-five will be reduced by one quarter. There will be five million fewer people in this country, equivalent

to the extinction of the present population of London. Again, during the next fifty years the number of women aged sixty-five and over is likely to be doubled, with a corresponding decrease in the number of young boys.

The economic and political consequences of this change are so terrible that very few people are willing to face the facts. We are so used to thinking of the English race as an expanding force both at home and abroad, that it is difficult to reconcile ourselves to the idea that national decline is inevitable, and that this disaster is imminent. Nothing short of a vast awakening of national consciousness, such as has occurred in Italy and in Germany, can prolong the power of Britain among the nations. *Facilis descensus.*

Some delude themselves and others by the vain imagination that a smaller population would make for happiness. They forget that all wealth is produced by human hands and that the real wealth of the world is perishable. The more workers, the more wealth will be produced. We are not suffering from over-population but from a faulty distribution of wealth. Whilst many are living on the bare necessities of life, tons of fish are being destroyed in order to keep up the price. That should be made a criminal offence. The fisherman must get a

fair price, and that could be ensured if the surplus fish were distributed free in the depressed areas. Let the Army Service Corps transport it, and let the Government investigate the difference in price of 1,000 per cent. between what the fisherman receives and the consumer pays.

As regards unemployment, Professor Cannon in his presidential address to the Royal Economic Society pointed out that the demand for labour is indefinitely extensible with the number of people able and willing to work for a remuneration compatible with the conditions of time and place. It is not over-population but the loss of the Indian market that has caused unemployment in Lancashire. As our population diminishes, so also shall we lose other markets.

Unless the birth-rate rises both at home and in the English-speaking countries which form the Commonwealth, we are bound to lose our Empire. More virile nations will take our possessions.

As our numbers decline, so also will our power of defence. Europe is now spending two millions a day on armaments. Might is not yet the servant of Right. The burden of armaments presses heavily enough on ourselves. With a smaller population that burden will be insupportable. Shakespeare has written our epitaph: —

“ This England that was wont to conquer others,
Hath made a shameful conquest of itself.”

Across the United States of America the moving finger is also writing, although the writing is as yet invisible to all except statisticians. The census of 1930 showed a total population of nearly 123 millions, an increase of 17 millions in ten years, an annual increment of 1·6 per cent. The small Colonial settlement which seceded from the British Crown in 1776 has become a mighty federation, and in so little space of time that some now living can remember when Chicago was a cluster of huts. The magnitude of this expansion has had a profound psychological effect on the nation, giving to the American people a sense of power and self-sufficiency which is not to be found in older and more stable populations. If that were borne in mind foreigners might have less difficulty in understanding the United States.

During the past sixty years in the United States the birth-rate has fallen by 50 per cent., and in 1933 was 16·4 per 1,000 of population in contrast to a birth-rate of 14·4 in England and Wales for the same year. If an annual increment of 1·6 per cent. in 1930 had been maintained, the population of the United States would have doubled in forty-three years.

Yet on closer analysis of the figures, Dr. Louis I.

Dublin, Statistician to the Metropolitan Life Insurance Company, and his associate, Dr. Lotka, have discovered that the present birth-rate in the United States is barely sufficient to maintain a stationary population. Consequently a further fall in the birth-rate will cause ultimate decline in population.

The explanation of this startling discovery is the present age distribution of population, which contains a large number of people at the reproductive periods of life. Towards the end of the last century large numbers of young emigrants from Europe came to the States, bringing with them young children or proceeding to have children in the States. At that time the birth-rate of the native population was also high, and large families were usual. These children have now reached the reproductive ages of life. In any population with a large proportion of persons between the ages of twenty and forty-five, there will be a high birth-rate, since between these ages reproduction takes place, and a low death-rate, because at these ages mortality is low. Consequently in the United States there is now a crude birth-rate of about 16 per 1,000 of population. Yet the true birth-rate, or number of births per 1,000 married women at the reproductive ages of life, tells a very different

story. To quote Dr. Louis I. Dublin¹: "This current fecundity has received our careful attention. Our study showed that quite apart from the prevailing birth rate, which is very misleading, fecundity has arrived at a point where the true birth rate and the true death rate virtually balance. In other words, were it not for the disproportionate number of persons at the child-bearing ages, which we have for the two reasons given, the number of births on the basis of present fecundity would be but little more than the number of deaths according to present mortality. The excess of births over deaths which we now enjoy—amounting to about 1,000,000 a year—would be nearly wiped out were it not for the effect of this artificial condition of a favourable age distribution.

"Our study points out also that in the course of time this artificial condition will be changed. The immigration figures are now only a fraction of what they were prior to the World War. In the future they will be even less. And the birth rate cannot continue to fall indefinitely. It must, sooner or later, become stationary or nearly so. When these two things have happened, the temporary bulge in the age distribution which we now have

¹ *Our Ageing Population*, Louis I. Dublin, reprinted from the *New York Times*, January 4th, 1931

at the child-bearing ages will have become smoothed out and the population will then be entirely dependent upon the existing fecundity, unaided by accidental irregularities in the age distribution. We shall then see in its clear nakedness how the birth rate balances the death rate.

"As I have said, our analysis showed that on the score of the true birth rate we are now barely holding our own so far as natural increase of population is concerned. Instead of enjoying a rate of natural increase in the year 1920 of eleven per thousand as would appear from the crude figures published by the government, the true rate was only 5.2, or about half as great. And in 1928 instead of the published figure of eight per thousand, it was, according to our reckoning, only 1.7 per thousand. For 1929 and in 1930, we estimate that the true rate of natural increase is close to zero.

"We realise, of course, that the actual conditions are very different. But we ascribe the excess of 1,000,000 births annually to the temporary circumstances of the concentration of lives at the young child-bearing ages; and this, we know, will in time be eliminated. In the course of time this concentration will be out of the picture and every one, not alone the population statistician, will realise it. In the meanwhile, we have analysed

the situation as it would be with this fortuitous circumstance removed. It is the only way that a true conception of what is going on among us and what may transpire in the future can be obtained."

The warning of history is unmistakable, and constitutes an argument which neo-Malthusians have never even attempted to refute. In the past, every nation that adopted any form of artificial birth control has perished. Of this truth the fall of Greece is an example. Her final defeat by the Roman troops was due to the physical inferiority of her people. They were weakened by malaria which began to be prevalent after 550 B.C., and was endemic throughout the greater part of the Greek world by 400 B.C.¹ The parasite of malaria is carried by the *Anopheles* mosquito, which breeds on marshy ground. Some writers have attributed the decline of Greece to malaria, but a more logical interpretation of the facts is that malaria became prevalent owing to a neglect of agriculture, whereby the area of marshy land was increased, and mosquitoes became more numerous.

But the immediate cause of the catastrophe was a change in the national character, well recorded by Mr. T. R. Glover :—

"The quiet individual, then, revolting from the

¹ *Malaria and Greek History*, by W H S Jones, 1909, p 85

luxury and display in which the adventurer spent his new wealth and gradually extinguished his faculties, and conscious of sharing the decline that was overtaking the world, was faced by despair. The old gods were not what they had been ; philosophy trampled on human nature ; right and wrong were confused ; genius was dead ; what was there worth while ? There is a world-weariness in this age, weariness of culture,¹ fear of life, ' failure of nerve,' as Professor Bury puts it. The Stoics ministered to the relief of this feeling by teaching the lawfulness and propriety of suicide. True, Seneca later on urged that ' you should leave life, not bolt from it,' *exire non fugere* ; but the pace is nothing, the exit was permitted. But a form of surrender as fatal and requiring less resolve, is race suicide. ' In our time,' writes Polybius,² ' all Greece was visited by a dearth of children . . . and a failure of productiveness followed, though there were no long-continued wars or serious pestilences among us. If, then, anyone had advised our sending to ask the gods in regard to this, what we were to do or say in order to become more numerous and better fill our cities—would he not have been a futile person, when the cause was

¹ Wendland, *Die hell-röm Kultur*, p. 40

² Polybius, xxxvii, 9 (circa 150 B C)

manifest and the cure in our own power? For this evil grew upon us rapidly, and without attracting attention, by our men becoming perverted to a passion for show and money and the pleasure of an idle life, and accordingly either not marrying at all, or, if they did marry, refusing to rear the children that were born, or at most one or two out of a great number, for the sake of leaving them well off or bringing them up in extravagant luxury.'

"It sounds very modern. Probably another factor operated, a sense of despair of raising the human crop in a world of war and anarchy, of the futility of effort, the feeling that the man travels best who gives fewest pledges to fortune. Again, the reaction will take the form of a heightened sense of solitude and forlornness; and the solitary and forlorn are apt to be the prey of emotion, especially when the level of culture is not very high." ¹

From the history of dead nations it would appear that race suicide is the mediate but not the ultimate cause of national decay, that it is but one expression of a certain weariness that pervades a civilisation whose force is spent; and that the suicide of a race demands less resolution than the suicide of an individual.

¹ T R Glover, *Progress in Religion to the Christian Era*, 1922, p. 254.

CHAPTER XVII

EUTHANASIA

IN November, 1931, the President of the Society of Medical Officers of Health, Dr. C. Killick Millard,¹ proposed "That individuals, who have attained the years of discretion, and are suffering from an incurable and fatal disease which usually entails a slow and painful death, should be allowed by law—if they so desire, and if they have complied with the requisite conditions—to substitute for the slow and painful death a quick and painless one." Dr. Millard also drafted a Bill for the legalisation of euthanasia, and now Lord Moynihan has founded the Voluntary Euthanasia Society for the purpose of promoting a Bill to legalise euthanasia in cases where the patient wishes to terminate his sufferings.

Dean Inge² concludes that "Euthanasia should be permitted, but only in very exceptional cases." He may be assured that the cases would be very exceptional, and Lord Moynihan will be disappointed if he imagines that patients suffering from incurable

¹ *Public Health*, November, 1931

² *Evening Standard*, 30th October, 1935

diseases will become members of his society. It is the everyday experience of doctors and nurses that patients even in the last stages of cancer or tuberculosis cling to life. Only once have I known a patient who asked for an over-dose of morphia. I have told his story in *Arches of the Years*, and on reflection very much doubt if he was altogether sane. The will to live is the most powerful instinct on life, stronger than sex or any other appetite, and for that reason it is probable that suicide is committed in a moment of temporary insanity. The only two suicides known to me personally were men who I always regarded as insane although they were never certified. It is not physical pain, but mental anguish that drives men and women to suicide. Many of us have experienced moments of unhappiness so intense as to make us say, "I wish I were dead," but the mood passes and we resume the march.

"Hope humbly then ; with trembling pinions
soar ;

Wait the great teacher Death ; and God adore.
What future bliss, He gives not thee to know,
But gives that hope to be thy blessing now.
Hope springs eternal in the human breast .
Man never Is, but always To be blest :
The soul, uneasy and confined from home,
Rests and expatiates in a life to come."

In those lines Pope expresses the Christian attitude towards the mystery of suffering.

In another medium the same thought has been expressed by Watts in his picture of Hope playing her Harp on the top of the earth. All the strings are broken bar one, and that one is the Thread of Life.

Yet even the late Dr. Henry Maudsley, who was an agnostic, thought that idiots, imbeciles, and the incurably insane had a place in the scheme of things, if only to arouse feelings of pity and thankfulness in the minds of those who were not so afflicted. He was the greatest alienist of his time, and was also a great philanthropist, because he left his fortune to found the Maudsley Hospital for the Prevention of Insanity.

Dean Inge writes that "Pain patiently borne no doubt ennobles the character, but there is no reason why we should not use every means of reducing or removing it; it seems unlikely that unnecessary cruelty can be part of the will of God" Most unlikely! As a small child I learnt that near the nettle the dock grows, and for the relief of pain there is morphia. "If," writes the Dean, "I refuse to put a mangled horse or dog out of its misery, I may be fined for cruelty. If I help a human being, who is dying horribly by inches from cancer, gangrene, or locomotor ataxy, to shorten his

or her sufferings, from which there can be no release but death, I may be hanged for murder." That is an appeal to sentimentality, and incidentally gangrene and locomotor ataxy are not painful diseases, although the former is most unpleasant for those in attendance on the patient. The essential difference between man and animal is that man has a soul.

The teaching of the Catholic Church on this subject has been well stated by Monsignor Hallett,¹ Professor of Moral Theology at Womersley: "*Man has no right over his own life, and can transfer none to others* The State has but a strictly limited right over the lives of its citizens, insofar as it can punish malefactors. 'He is the Minister of God, an avenger to execute wrath upon him that doeth evil' (Rom. xiii. 4). Beyond that the State cannot go *It is bound to support and protect the law of God, which is the only moral basis of its own authority*

"The moral law of God, exhibited by right reason, is confirmed by the teaching of Holy Scripture and the authority of the Church. In the busy rush of life, reason often blinded by passion or beguiled by sophistry, may show sometimes but a dim light, yet the faithful Catholic is not left without guidance, for he knows the Catholic Church to be

¹ *Catholic Medical Guardian*, April, 1932

infallible in teaching morality as well as faith, and to be the authoritative exponent of the Sacred Scriptures. Such an advantage has even an unlettered Catholic over learned Deans and Canons who share not his faith.

“Catholic morality, then, distinguishes between the prohibition of taking one’s own life, and the duty of preserving it. The former, as a negative precept, does not admit of exception or degree, but the latter, a positive precept, must of necessity admit exception. *It is the difference between taking one’s own life and allowing it to be taken*, and though the distinction may be, in extreme cases, a very thin one, yet it is a dividing line upon one side of which is right and upon the other wrong. In ordinary circumstances there is little difficulty, but in extreme cases the line between right and wrong must necessarily be a fine one, and there can be little wonder that sometimes errors have been made, and they may demand our sympathy. *Yet it is of the greatest importance to have right principles*, for by these errors of judgment may be corrected. An error in the application of a principle is far less disastrous than an error in the principle itself. One who says ‘I know murder is never licit, but I honestly think this act not to be murder,’ is in a far less dangerous position (from the point of view of general morality) than the man

who says 'I know that this act is murder, but I am not sure that murder is always wrong.' *For if moral principles admit of exceptions, they are no longer principles, but matters of expedience.*

"We may illustrate the point by the example Dr. Millard gives of soldiers dying rather than surrendering. They do not kill themselves but they allow themselves to be killed. They are not, then, guilty of violating the negative precept, and before deciding whether they violate the positive precept *we must consider the circumstances.* If it is of great military importance that the post should be held to the end, if to hold up the enemy even for a few minutes is greatly advantageous, etc., etc., then the defenders will be justified in fighting until they are killed. On the other hand, if they had no important military purpose, but acted, shall we imagine, merely through vainglorious pride, they would be acting immorally, though naturally they might be excused from personal guilt through ignorance.

"In general, then, it is the teaching of Catholic moralists that *a man must take reasonable care of his life, but that he is not bound to take extraordinary means to preserve it*. He may expose his life to more or less serious risk in proportion to the gravity of the cause. He may work at dangerous occupations to earn a living, he may attend to cases of cholera or small-

pox or to lepers or the plague-stricken at grave risk to his own life for the sake of charity. Men must take reasonable precautions against sickness, they must not refuse proper medical advice or nursing, if they are seriously ill. They must not refuse food or ordinary remedies *But they are not bound to undergo operations of extreme gravity or to go to live, say, in Australia, in order to lengthen their lives.* In such cases they may allow their disease to take its course and are not bound to resort to 'extraordinary' means to delay death. In order to alleviate grave pain, the Catholic moralist, in agreement with Dr. Millard, will permit the administration of drugs, even though the result may be a slight abbreviation of life. To take another example: if a man is assured by his doctor that unless he gives up tobacco and alcohol he will never make old bones, he will not be condemned by Catholic moralists if he refuses, apart from special circumstances, *e.g.*, of responsibility for others, to make the sacrifice.

"The principle in all these cases is the same, *viz.*, that whilst a man may never directly take his own life or directly aim at or intend his own death, yet he is bound to take only ordinary and not 'extraordinary' means to preserve his life, even though he foresees clearly the near approach of

death as a consequence of his refusal to take such 'extraordinary' means."

So far as the medical profession is concerned, it is our duty to alleviate suffering, but not to kill. Indeed, the very first aphorism of Hippocrates was *Primum non nocere*. Dean Inge writes: "We very properly hide away the most distressing cases of illness, and many people do not know how horrible the preliminaries of death sometimes are. In order to help myself to form an intelligent opinion on this question, I spent an hour in the museum of the Royal College of Surgeons, and purposely looked at the most dreadful among the exhibits. What I saw made my blood run cold. It was far worse than the old dungeon at The Hague, with all the instruments of torture in working order."

Had the Dean been accompanied on his tour of the museum by a pathologist, he would have been even more horrified to hear his companion exclaim: "What a beautiful specimen!" Everything depends on the point of view.

As a doctor I would say that the Dean gave himself a distressing experience, and to no purpose at all. Being a layman he probably imagined that the more abnormal the tumour, the more painful the disease. That is not so, and some tumours are painless, although no one can

bear the thought of cancer of the tongue with equanimity.

Dean Inge comes to the following conclusions :
“ And yet, though all the arguments seem to be strongly in favour of the proposed change in the law, I could not bring myself to add my name to the signatures in favour of Lord Moynihan's Bill. For consider a very typical case—the commonest case, probably, that would arise if the Bill became law. A woman is suffering from inoperable cancer. The doctor reluctantly informs her that she will probably live for some months in dreadful pain, and perhaps with those repulsive symptoms which often accompany the later stages of the disease.

“ On hearing this she asks for euthanasia. Her written request has to be countersigned by her nearest relative—her husband. He is asked to give his consent to the curtailment of his wife's earthly existence by some months ; to antedate the inevitable parting ; to forego the tender ministrations in which the great love of a lifetime might find its last expression ; to sign the death-warrant of his nearest and dearest. Can one imagine a more horrible dilemma ?

“ My position, I confess, is rather illogical. But in a question like this, natural feelings cannot be

disregarded. The human spirit can often triumph over pain with a quiet heroism which amazes the onlookers. Those who have seen many deathbeds would only rarely, I think, wish that they had been anticipated by an overdose of morphia."

In admitting that his views on this subject are illogical, Dean Inge merely proves that he is very human and, I would add, very humane. The euthanasia now demanded is to be voluntary on the part of those suffering from painful or incurable disease. Why voluntary? Would it not be advisable to extend the blessings of an easy death to all idiots, imbeciles, and incurable cases of insanity? A new-born infant, if deformed by a club-foot as was Lord Byron, would be saved a great deal of discomfort and trouble in later life if it were killed, painlessly of course, immediately after birth. Many old people are a burden to themselves and an expense to their children. In such cases we might follow the example of some of the more savage African tribes amongst whom there are no old people. As soon as men or women show signs of age they receive a happy despatch from their children, who club them on the back of the head. Our children, not being savages, would lead us to the Lethal Chamber—"This way, mother! You can't see very well, so take my hand. I am taking you for a long walk."

"Thank you, dear. It's a long time since you took me for a walk "

When responsible and thoughtful members of Society begin to advocate the prevention and destruction of human life by means of contraceptives, abortion, infanticide, sterilisation, and euthanasia, it is an evil omen, and the sign of a civilisation whose creative power is spent.

"Souffrir plutôt que mourir, c'est la devise des hommes "

THE END



